

CHINESE MEDICINE SERIES ⑦

HISTORY
OF
CHINESE MEDICINE

PLATE I



DR. SUN YAT-SEN 孫逸仙 (SUN WEN 孫文) 1866-1925

Founder of the Republic. A rare photo of the late President in Chungshan suit with his autograph in English.

(Courtesy Dr. Lim Boon-keng, Anon.)

Frontispiece

HISTORY OF CHINESE MEDICINE

Being a Chronicle of Medical Happenings in China
from Ancient Times to the Present Period

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SECOND EDITION



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PREFACE TO THE SECOND EDITION

THE NEED for a second edition so soon after the first has encouraged the authors to think that this work on the history of Chinese medicine has met a long-felt want for a concise and authoritative account of one of the most fascinating subjects in the evolutionary story of the Chinese people. Of late considerable interest has been centred on China and things Chinese. It is hoped that the appearance of this new edition, containing an epitome of all that is known both of the development of the indigenous art and the impact of modern medical science, will be greeted with even more enthusiastic response than the original edition has elicited.

The task of revision has been heavy. Every effort has been made to rectify defects discovered in the first edition. The whole work has been brought up to date; many new facts have been added and unimportant details either deleted or relegated to the appendices. Several chapters have been entirely re-written, while new ones have been added. For instance, Book One which deals with the evolution and development of the indigenous art now contains twenty-six chapters instead of twenty-one. The chapters on Ancient Drugs, Cultural Aspects of the Mediaeval Period, Decline of the Native Practice, Prominent Practitioners of the Ching dynasty, and Struggle between the New and Old Forces are entirely new, while much additional matter has been incorporated in the text and the appendices. In the case of Book Two which treats of the introduction and progress of modern medicine, a thorough revision has been effected in the existing chapters, whilst the epochal events of the past eight years are described in a separate chapter dealing with the consolidation of medical work under government auspices.

In spite of drastic efforts to eliminate tedious details and matter of purely topical interest, the additions made necessary by the relentless march of progress have more than counterbalanced the saving in bulk that would otherwise have been effected. The net result is an increase of two hundred pages.

It is obvious that the tremendous task of revision, involving as it does the checking of thousands of references, re-writing of large sections of the book and proof-reading of nearly a thousand pages of type, could not have been accomplished without the help of devoted

colleagues. To Dr. C. Y. Wu and Dr. R. Pollitzer upon whose shoulders has fallen the main burden of seeing the book through the press the authors owe their best thanks. Thanks are also due to Dr. Sung Chih-ai who assisted in checking the numerous Chinese references, and to the printers, the Mercury Press, for the care and patience with which they have carried out a very workmanlike job. The modern script type used for the Chinese characters is attractive and an improvement on the old printed type employed in the first edition.

Most of the old illustrations have been retained in the present edition as they are of historic value, but several new ones have been added to bring the story up to date. The subject indices which appeared separately in the first edition are now combined and enlarged; it is hoped their value to readers will thereby be increased.

THE AUTHORS

Shanghai, China.

October 10, R.C. 25 (1936).

PREFACE TO THE FIRST EDITION

The idea of producing a history of Chinese medicine from its earliest beginnings as an indigenous and mysterious art to the subsequent introduction of so-called "western medicine" into China, and its steady progress therein, was conceived more than fifteen years ago. From the very commencement of the work quite a number of unforeseen difficulties were encountered.

In the first place, scant and disjointed sources of information alone were available. Innumerable journals, books, reports, etc. in many languages and widely scattered over several countries had to be consulted and combed, and the required information carefully checked. The difficulty may be gauged by the following instance: only one complete set of the China Medical Journal since its first issue in 1887 was procurable in Shanghai—and that at the offices of the Medical Missionary Association.

In the second place, owing to the wide distance which, until recently, separated the two authors of this work, extra labour was entailed and much valuable time consumed. It was also realised that on account of the nature of the book, containing as it does numerous Chinese characters and names of persons and places in Chinese, publication in Europe or America would be difficult if not impossible.

A history of Chinese medicine should take account not only of the theory and practice of the time-honoured native art but should incorporate the achievements of modern medical science which have resulted in the remarkable progress of the last century. Chinese medicine, to be understood, and its significance appreciated, must be studied as one whole. With its roots deeply embedded in the soil of four milleniums of empiricism, it only began to extend into the atmosphere of constructive effort when there was grafted on to it the vital principles of observation, experimentation and co-ordination so characteristic of modern scientific medicine, and without which no advance was possible. In no other field of endeavour in this country has the experimental method realised such concrete and far-reaching results as in the domain of medicine.

The reader may notice, and wonder at, the discrepancy in the sizes of the two Books: Book One, dealing with the panorama of medicine from the earliest recorded period to the close of the eighteenth century, covers only one-fourth of the entire volume, while Book

Two, treating of the past hundred and thirty years, extends to more than 400 pages. The explanation is simple. Apart from the natural difficulties inherent in the collection and preservation of records of medical discoveries during the epochs covered by the first Book, medical effort in China came to a practical standstill long before the close of the seventeenth century, remained dormant throughout the fruitful years in Europe following the impetus of Harvey's discovery, and was only resuscitated with the advent of the medical missions.

The aim of this book is twofold. To students of the old school, with their praiseworthy efforts to preach and retain the admittedly manifold virtues of the ancient order, the account of how the modern conception of the prevention and treatment of disease came to gain a footing in this conservative land should make inspiring reading and yet serve as a reminder that the world (particularly medical science) has not remained stationary since the time of Hua T'o. On the other hand, protagonists of experimental medicine, in their laudable attempts to inculcate the spirit of scientific research into the masses, are urged not to spurn the lessons of the past but to see in the old tradition, not something to be rejected, but a background that throws into vivid relief the wonderful achievements of the present age.

As the work proceeded, it was found necessary to centralise the collection of data under a colleague who could devote more time to the proper application of this task than the authors burdened, as they were, with their official duties. The authors were fortunate in securing the services of Dr. Robert Pollitzer (graduate of Vienna) who, for ten years and more, has been the right-hand man in scientific and literary pursuits of one of them (W.L.T.), and without whose collaboration and indefatigable energy the completion of this History would have been unduly prolonged.

The authors also desire to state that, although they have consulted one another for years over the publication of this work, each is wholly responsible for his own portion.

In the preparation of this book considerable assistance has been derived from the files of the China Medical Journal, National Medical Journal, Chinese Recorder and other publications, as well as from ancient Chinese literature and personal narratives of many friends, Chinese and foreign. The illustrations have been chosen with care, not a few being from old paintings and engravings in the authors' private collections. Professor Bernard Read, of the Peiping Union Medical College, has kindly supplied some treasured photographs in his possession for use in this work. Wherever possible, due acknowledgment of the source is made under each illustration.

Chronological Tables as well as Indices of Persons and Places, covering about one hundred pages, have been compiled with the utmost care; it is hoped they will prove not the least useful part of this History.

Both Dr. Robert Pollitzer and Miss Alice Wu have devoted much time and labour in seeing the book through the press. To them, as well as to the printers (who have shown the greatest patience in completing a book of this magnitude) the authors wish to tender their best thanks.

K. C. WONG

WU LIEN-TEH

Shanghai, July 15, 1932.

BOOK ONE

**EVOLUTION AND DEVELOPMENT OF
THE INDIGENOUS ART**

INTRODUCTION TO BOOK ONE

China is one of the largest as well as the oldest existing nation in the world. When the inhabitants of Europe and America were roaming about in half-naked condition, living in the woods and fishing in willow canoes, the Chinese were dressed in silks and enjoying a high stage of culture. Before Moses led the Israelites through the wilderness, the Chinese had laws, literature, and religious knowledge superior to those of Egypt. While Homer was composing and singing the Iliad, China's minstrels were celebrating her ancient heroes, whose tombs had already been with them for nearly thirteen centuries. A hundred years before the north wind rippled over the harp of David, an emperor of China composed classics which are committed to memory at this day by every advanced scholar of the Republic. Her literature was fully developed before England was invaded by the Norman conquerors. The Chinese invented fire-arms long before Schwartz, and the art of printing five hundred years before Caxton was born. Gunpowder, the mariner's compass and the making of porcelain were first discovered by the Chinese. The Great Wall, completed two hundred and twenty years before Christ was born at Bethlehem, and containing material enough to build a wall five or six feet high around the globe, is one of the great engineering feats of the world. The admiration and the model of the surrounding nations, the centre and source of the highest culture of the Eastern world, no wonder she won the name and for ages was known to all the Orient as "The Middle Kingdom."

The real origin of the Chinese race remains an unsolved problem. It is not definitely known who their ancestors were or whence they came. Some suppose that they first lived in the oasis of Khotan in the south-west of Eastern Turkestan(1). Others assert that their original home was in the rich basin of the Euphrates, the mother of all races, and that they derived much of their civilization from the ancient Chaldeans. And still others conclude, from the coincidences in language, manners and customs, that Babylonia was the region from which they came(2). These theories, based more or less upon religious myths, have not been scientifically proved. As far as reliable record shows, the valley of the Yellow River was the cradle

(1) Baron von Richthofen: China, Vol. 1, p. 48; quoted by Hirth in *The Ancient History of China*.

(2) Lacouperie: *Western Origin of the Early Chinese Civilization*, London, 1894.

of the Chinese race and their ancestors, some five or six thousand years ago, migrated from the north-western part of Asia and finally settled in what is now the province of Shensi. As a result of the discovery of the *Sinanthropus pekinensis* at Choukou Tien (周口店) in 1929(3) and other archaeological and anthropological investigations made in recent years it is safe to assume that prehistoric man flourished in this particular region from the remotest antiquity.

The present-day racial complex called 'Chinese' is made up of heterogeneous elements. They were not the first occupiers of the soil and it has been only very gradually that they have succeeded in driving out the aborigines, for large tracts of country in the south and south-west are still possessed by these tribes. Like the Chaldeans and Israelites they were a nomadic people, but after they obtained possession of the territory from the original savages they soon took up agricultural pursuits. From this nucleus and through countless ages we find China growing and extending her limits. Eventually she expanded downwards to the Yangtze River and, by genius and superior culture, the Chinese absorbed other tribes, until at one time during the Yuan dynasty under Kublai Khan their territory assumed immense proportions—north to Korea and south to Annam, Siam, as far as to Burma. The China of today covers about 5,000,000 square miles, is the second largest nation in the world, and supports a population roughly estimated at 400,000,000 souls, about one-fifth of the human race(4).

Coming to the historical aspects, which form the chief aim of our study, we find many significant facts. Chinese history is unique for several reasons. First, it is the history of the oldest people on earth. Other ancient empires like Egypt, Babylonia, and Assyria, once contemporaries of China, came into existence, reached the zenith of their development, and passed away, while she still continues to exist. A second remarkable feature of Chinese history is that it tells the story of a people who over three thousand years ago reached a high degree of civilization, but who since that time have moved forward but little. As has often been stated, China furnishes a

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- (3) Davidson Black: *A Preliminary Report on the Discovery of a Skull of Adult Sinanthropus pekinensis at Chou Kou Tien*; The China Journal, Missing Link Number, March, 1930. Also see Chinese Medical Journal, Vol. 48, No. 12 (Davidson Black Memorial Number). The actual village is 32 miles south-west of Peiping (Peking).
- (4) Giles in *The Civilization of China* says: If the Chinese were to march a given point in single file, the procession would never end; long before the last of the three hundred millions had passed by, a new generation would have sprung up to continue the endless line. Dyer Ball in *Things Chinese* also made this statement: It would take over twelve years for the population of China to walk by a given spot, one person passing each second.

INTRODUCTION TO BOOK ONE

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striking example of what the scientist calls *arrested development*. Up to a certain point progress was made in the art of government, arts, manufactures, literature, religion, and all that is included in the term civilization, but then there came a period of stagnation, from which China has only recently begun to recover. A third striking feature is that it is the history of a nation which up to recent times has been little influenced by the rest of the world. The Chinese, for ages, owing largely to their isolated geographical position, were not brought into close relations with the peoples of other continents. As a consequence of this separation they developed their own peculiar type of civilization, and the spirit of exclusiveness and contempt for those outside the country became ingrained in their nature(5).

The study of Chinese history presents innumerable difficulties. Chinese historians have not written history in the true sense of the word, but have left behind them a vast mass of facts, without attempting to trace to any extent the causes and effects. The most trivial and the most important occurrences stand side by side in their pages. Their conception of history is that of a simple record; not that of a work of art. In other words, they wrote chronicles rather than history. An idea of the magnitude of this material may be gathered from the fact that the twenty-four dynastic histories alone comprise the tremendous total of 3,266 books or 16,330 volumes. In addition to these there are the collateral histories, annals, complete records, separate histories, miscellaneous histories, official documents, historical excerpts, contemporary records, topographical histories, official repertories, historical critiques and so forth. In the presence of these enormous accumulations the question arises, what estimate are we to form of their value? Medical history, in particular, presents even greater difficulties for we have no work of any kind dealing specially with this subject. The arduous task of sifting and arranging this vast amount of data and of tracing the relations between them remains to be accomplished by future historians.

In common with the practice of other countries Chinese history is generally divided into the mythological, ancient and modern periods. There is, however, no distinct line of demarcation between them. Where the legendary ends and the historical begins is quite unsettled. Some sinologists put the commencement of the legendary period at about thirty centuries before the Christian era; others select the beginning of the Chou dynasty as the starting point of history and reject everything that precedes it. In the last two decades great strides have been made in archaeology which shed a new light on many of the problems of ancient history. Foremost among these

(5) Hawks Pott: *A Sketch of Chinese History*.

are the discoveries of the oracle records of the waste of Yin(6), the wooden slips of Tun-huang Cave(7), the ancient books of the Grotto of Thousand Buddhas(8), and the old manuscripts of the Ch'ing Dynasty Imperial Library(9). On the basis of these important findings a new method of studying Chinese history has been developed, and a modern school of historians has arisen. A considerable number of articles and books on this subject have appeared in print. When the results of the researches now being conducted are made known more light may be expected from them in the near future(10).

Owing to the way in which Chinese history has been written and the fact that medical practice has been static for thousands of years, some come hastily to the conclusion that the history of Chinese medicine is lacking in any real advance. A closer study, however, shows that numerous important changes in medical thoughts and movements can be clearly traced and distinguished. Chinese medical history may be divided into four great periods as follows:

- I. The Ancient or Legendary Period (2697-1122 B.C.)
- II. The Historical or Golden Period (1121 B.C.-960 A.D.)
- III. The Mediaeval or Controversial Period (961-1800 A.D.)
- IV. The Modern or Transitional Period (1801-1936 A.D.)

The legendary period may be termed that between the dawn of civilisation and the end of the Shang dynasty. Countless myths and legends were recorded which, while possessing little value from the historian's viewpoint, are of interest to students of mythology. Thereafter the accounts were more authentic as the legendary epoch developed into the historical. Similarly, that beginning with the Chou and ending with the T'ang dynasty may be styled the historical period. This covered a space of nearly two thousand years and extended over three dynasties, each having some distinct features of its own. The Chou dynasty was characterized by its theoretical speculations. Medicine was practically dominated by the philosophical teachings of the time. The Han dynasty, which is considered the most glorious epoch in Chinese medical history, was rendered especially memorable from the fact that during this period there lived Ts'ang Kung, Chang Chung-ching and Hua T'o, three of the greatest physicians of China. Much stress was laid upon direct observations, thus placing medicine on a more scientific basis. Hitherto Chinese healing art may be said

(6) 殷虛甲骨文字

(7) 敦煌塞上及西域各地之簡牘

(8) 千佛洞之六朝唐人所書卷軸

(9) 內閣大庫之書籍檔案

(10) For further information consult the works of Wang Kuo-wei, Ku Chih-kang, Kuo Mo-jo, Wei Chü-hsien and others.

to have been entirely indigenous. But in the T'ang dynasty Buddhism came in, bringing with it Indian ideas and therapeutic measures. At the same time the Taoist became active and invented a system of charms for the cure of diseases. As a result, numerous forms of treatment were inaugurated and a great variety of remedies was brought into use. Briefly, the Chou dynasty may be called the age of philosophy, the Han dynasty the age of science, and the T'ang dynasty the age of superstition.

From the eleventh to the seventeenth century there was a marked change in Chinese medical thought. Instead of the pedantic worship of the ancients, the publications were mostly controversial in character attacking old writings as well as one another. Intensive specialism was noticeable, many important monographs being produced. In the Chin Yuan period medical opinion became more and more divided and gradually developed into four schools. Subsequent writers all revolved around the different schools. This period may be termed the mediaeval or controversial period. With the introduction of "western" medicine came the modern or transitional period. The most prominent feature of this epoch is the struggle for supremacy between the old and new forces. The latter, however, is slowly and steadily gaining ground and, though it may take some time, the dawn of another golden era is looming large on the medical horizon of China.

This work, as designated by the sub-title, is a chronicle of medical happenings in China from ancient times down to the present day. It is divided into two parts. The first deals with pure Chinese art and practice while the second deals with events after the advent of occidental medicine. The authors have spent over sixteen years at this work. Hundreds of books and articles, both in English and Chinese, have been consulted and several doctors of the old school have been engaged to help in this task. The lack of library facilities has been keenly felt, especially when compiling the bibliography. There are no proper collections of Chinese medical literature in any institution. Thus a good deal of time, resources and research have been devoted to gathering the various materials together. The collection now in possession of the authors is perhaps the most complete in this country.

The following remarks explain the arrangement of the subject matter:

1. When romanized Chinese terms or phrases are used the Chinese characters are given so as to facilitate reference.
2. The romanization is based on Wade's system except when names of places like Hangchow, Swatow, Canton, Soochow, etc., are spelt according to the accepted usage.

3. To enable foreign readers to have a better notation of time, a brief chronological table has been prepared giving the title of the dynasty with its corresponding dates in the solar calendar.

4. The dates are mainly based on Liu Ta-pa's Chinese Chronological Tables published by the Commercial Press, Shanghai, 1929.

5. All proper names are in ordinary type, titles of books in *italics*.

TABLE OF CONTENTS

	<i>Page</i>
PREFACE TO THE SECOND EDITION	v
PREFACE TO THE FIRST EDITION.	vii

BOOK ONE

EVOLUTION AND DEVELOPMENT OF THE INDIGENOUS ART

INTRODUCTION	xxi
------------------------	-----

A. THE ANCIENT OR LEGENDARY PERIOD (2697-1122 B.C.)

CHAPTER

I. Beginnings of Chinese Healing Art	1
II. Founders of Chinese Medicine	6
III. Relationship between Religion and Medicine	12

B. THE HISTORICAL OR GOLDEN PERIOD (1121 B.C.-960 A.D.)

IV. The Philosophy of Disease	15
V. Famous Ancient Physicians	22
VI. The Nei Ching or Canon of Medicine	28
VII. Medical Conditions during the Chou Dynasty	39
VIII. The Great Trio: Ts'ang, Chang and Hua	48
IX. The Doctrine of the Pulse	57
X. Influence of Taoism and Buddhism on Medicine	67
XI. Cultural Aspects of the Han and T'ang Dynasties	74
XII. Standard Works of the Historical Period	80

C. THE MEDIAEVAL OR CONTROVERSIAL PERIOD (961-1800 A.D.)

XIII. The Period of Intensive Specialism	86
XIV. Leading Physicians of the Sung Dynasty	90
XV. Medical Schools and State Examinations	94
XVI. The Four Famous Doctors of Chin Yuan	98
XVII. The Pen-Ts'ao Kang-Mu or Great Herbal	105
XVIII. Notes on Some Famous Ancient Drugs	110

	<i>Page</i>
XIX. Medical Sects of the Ming Dynasty	127
XX. Cultural Aspects of the Mediaeval Period	132
D. THE MODERN OR TRANSITIONAL PERIOD (1801-1936 A.D.)	
XXI. Decline of the Native Practice	141
XXII. Prominent Practitioners of the Ching Dynasty	147
XXIII. Struggle between the New and Old Forces	159
XXIV. List of Important Works	169
XXV. Cultural and Social Conditions	178
XXVI. Early Anatomy, Materia Medica, Medical Juris- prudence, Internal Diseases, Obstetrics, Ophthal- mology, Parasitology, Surgery, etc.	194
APPENDICES:	
I. Scheme Illustrating Some of the Sources of Chinese Medicine	235
II. Chronological Table	236
III. Summary of Chinese Dynasties	240
IV. Index of Chinese Books	241
V. Bibliography	247

BOOK TWO

INTRODUCTION AND DEVELOPMENT OF MODERN
MEDICINE IN CHINA

	<i>Page</i>
INTRODUCTION	257
CHAPTER I. Period before A.D. 1600. Early contacts between China and Western Medicine	259
CHAPTER II. Period between A.D. 1600 and 1800, dealing mainly with the influence of Catholic Missionaries	263
CHAPTER III. Introduction of Jennerian Vaccination against smallpox in China and its further progress in the country	273
CHAPTER IV. Period 1820-1842. Permanent introduction of Western medical methods by the surgeons to the East India Company and the first Protestant medical missionaries	302
CHAPTER V. Period Autumn 1842-1855. Consolidation and expansion of early medical missionary work..	333
CHAPTER VI. Period 1856-1865. Characterised by intensive individualistic efforts	367
CHAPTER VII. Period 1866-1879. Adoption of new methods for medical work	390
CHAPTER VIII. Period 1880-1885. Marked by considerable progress in medical education	437
CHAPTER IX. Period 1886-1893. Early consolidation of medical efforts	463
CHAPTER X. Period 1894-99. Describing (a) The spread of plague in China leading to the great outbreak at Canton and Hongkong in 1894 and (b) Further consolidation of medical efforts..	506
CHAPTER XI. Period 1900-1910. Formation of proper Union Medical Schools and systematic training of nurses	538
CHAPTER XII. Period 1911-1920. Overthrow of the Manchu dynasty and the First Manchurian Plague Epidemic. Beginnings of modern Public Health work under Chinese leadership	589

	<i>Page</i>
CHAPTER XIII. Period 1921-1927. Substantial progress in Public Health and other medical activities mainly under direction of Chinese physicians	656
CHAPTER XIV. Period 1928-1936. Consolidation of medical work under Government auspices	719
CHAPTER XV. General survey and outlook	817
APPENDIX: Chronological Table	823
INDICES: I. Index of Geographical Names	860
II. Index of Persons (Book One)	865
III. Index of Persons (Book Two)	870
IV. Index of Subjects (Books One & Two)	891

LIST OF ILLUSTRATIONS

		<i>Facing Page</i>
PLATE	I: Dr. Sun Yat-sen	<i>Frontispiece</i>

BOOK ONE

HALF-TONE PLATES

PLATE	II:	Porcelain figure of SHEN NUNG, the Father of Medicine	6
		FU HSI writing the Pa-Kua	6
		SHEN NUNG testing drugs	6
PLATE	III:	Internal Organs, from an ancient anatomical chart	20
PLATE	IV:	"Immortals" of ancient Chinese Medicine (FU HSI, SHEN NUNG, HUANG TI, CHI Po)	22
PLATE	V:	"Immortals" of ancient Chinese Medicine (PIEN CH'IAO, CHANG CHUNG-CHING, WANG SHU- HO, HUA T'o)	24
PLATE	VI:	Standardised Plan of a Temple of Medicine	40
PLATE	VII:	Chart showing course of travelling vessels and acupuncture points. (Anterior)	44
PLATE	VIII:	Chart showing course of travelling vessels and acupuncture points. (Posterior)	46
PLATE	IX:	Life size bronze figure (Sung dynasty) showing acupuncture points, anterior view	50
PLATE	X:	CHANG CHUNG-CHING, the Hippocrates of China HUA T'o, the famous surgeon of the Three King- doms	52
PLATE	XI:	Surgeon HUA T'o operating upon the war hero KUAN KUNG for necrosis of arm resulting from a wound in battle	56
PLATE	XII:	Photos showing Moxa Scars	60
		Two photographs showing classical method of feeling the pulse	60
PLATE	XIII:	Specimen of an Old-style Prescription	68

	<i>Facing Page</i>
PLATE XIV: Taoist mendicants, one with long iron rod through cheek and the other with three big needles through flesh of arm	72
PLATE XV: Gods of Fertility. Note the numerous little idols on the altar, Tung Yueh Temple, Peiping	78
LU TUNG-PIN, one of the patron gods of medicine	78
LI SHI-CHEN, famous author of The Great Herbal, a standard work on materia medica	78
PLATE XVI: Chart showing spots for applying plasters	88
PLATE XVII: Shrine of the Three Emperors of Medicine (Peiping) FU HSI in the centre, SHEN NUNG on the left and HUANG TI on the right	184
PLATE XVIII: "Fatal Spots" from the <i>Hsi Yüan Lu Chi Tseng</i> (anterior and posterior aspects)	196
The Skeletal System from the <i>Hsi Yüan Lu Chi Tseng</i> (anterior and posterior aspects) ..	196
PLATE XIX: A young eunuch undressed to show site of castration	202
A native-style apothecary shop in a Shantung city	202
PLATE XX: WANG HSUN-CHENG, "Reformer of Medicine"	214
PLATE XXI: Exterior of the Temple of Medicine, Peiping ..	224
Bronze Horse at Tung Yueh Temple, Peiping, used by worshippers suffering from eye complaints and rheumatism	224
PLATE XXII: Kwan Yin, Goddess of Mercy	230
Types of Chinese surgical instruments handed down from ancient times	230
PLATE XXIII: Knives used for the operation of Castration ..	232
A scene in the Emperor's Palace, Peiping, Eighteenth Century, showing a newly operated eunuch looking miserable and others joking. One is actually wearing a monocle	232
PLATE XXIV: A group of seven eunuchs of the Imperial days in Peking. Note their waxy appearance ..	234
A group of four Imperial eunuchs attending the late Empress-Dowager TZU-HSI, Imperial Palace, Peking, 1902	234

TEXT FIGURES

	<i>Page</i>
1. The Pa-Kua	16
2. The River Plan	17
3. The Lo Scroll	17
4. Diagram of the Pa-Kua	18
5. Diagram of the Five Elements interacting on each other	20
6. Internal Organs (anterior and posterior aspects)	32
7. Pictures showing the course of the blood vessels (anterior and posterior aspects)	34
8. Pictures showing measurements of bones	37
9. Diagram illustrating the organization of a medical department in the Chou dynasty	40
10. CHANG TAO-LING or the Heavenly Teacher	68
11. Charms for epidemic diseases	69
12. Charm to prevent spitting of blood	69
13. A temple prescription from Ling-Yin Monastery, Hangchow	70
14. Scheme illustrating some of the sources of Chinese Medicine	235

BOOK TWO

HALF-TONE PLATES

			<i>Facing Page</i>
PLATE	XXV:	Portraits of PERES VERBIEST and SCHAAL, PAUL HYU and CANDIDA HYU (his granddaughter)	264
PLATE	XXVI:	ALEX PEARSON, (1780-1874) Senior Sur- geon, East India Co., Canton, who in- troduced vaccination into China, 1805.. REV. R. MORRISON, D.D., F.R.S. (1782-1875), first Protestant missionary to China and two pupils.. . . .	278 278
PLATE	XXVII:	DR. THOMAS R. COLLEDGE, M.D., F.R.S. (1797-1879) Originator of Medical Missions REV. DR. PETER PARKER, D.D., M.D. (1804- 1888)	308 308
PLATE	XXVIII:	DR. WM. LOCKHART, F.R.C.S. (1814-1896) BENJAMIN HOBSON, M.R.C.S. (1816-1873)..	322 322
PLATE	XXIX:	WONG FUN (WONG CHEUK-HING) 1828- 1878, first Chinese doctor to have graduated abroad SIR ROBERT HART (1835-1914).. . . .	372 372
PLATE	XXX:	DR. PATRICK MANSON (1844-1922) Community Hospital, Amoy.. . . .	410 410
PLATE	XXXI:	DR. LIN LIEN-HUI (1862-1900).. . . . Peiyang (Later Naval) Medical College, Tientsin. Staff and Students of the Eleventh Class, 1911	442 442
PLATE	XXXII:	DR. SUN YAT-SEN (1866-1925).. . . . Canton Hospital (Rebuilt 1860).. . . .	446 446
PLATE	XXXIII:	Canton Hospital showing Dr. Sun Yat-sen's room from outside Canton Hospital—Bed-room of Dr. Sun Yat- sen (No. 10)	448 448
PLATE	XXXIV:	First Mental Hospital in China, opened 1898 in Canton through exertions of DR. J. C. KERR (Died 1901) Some patients of above Hospital with DR. J. C. KERR and attendant behind.. . .	470 470

			<i>Facing Page</i>
PLATE	XXXV:	SIR KAI HO KAI (1859-1914), Physician and Barrister	474
		DR. LIM BOON-KENG (1869-)	474
PLATE	XXXVI:	YAMEI KIN, M.D. (1864-1934)	522
		HU KIM-ENG, M.D. (1865-1929)	522
		MARY STONE, M.D. (1873-)	522
		IDA KAHN, M.D. (1873-1931)	522
PLATE	XXXVII:	MRS. E. MCKECHANIE THOMSON	556
		CAROLINE MADDOCK HART	556
		MISS CORA E. SIMPSON, R.N.	556
PLATE	XXXVIII:	First National Conference of Nurses' As- sociation of China, Shanghai 1914 ..	560
		MISS LILLIAN WU and some Red Cross Nurses, 1928	560
PLATE	XXXIX:	International Plague Conference in Session, Mukden, April 1911	592
PLATE	XL:	Delegates of the International Plague Con- ference, Mukden (April 1-30, 1911) ..	594
		Delegates of International Medical Con- ference, Sept. 21, 1921, as guests of Dr. and Mrs. WU LIEN-TEH at the Central Park, Peking	594
PLATE	XLI:	DR. LI SHU-FAN (1886-)	596
		Staff of the First National Board of Health, Canton, 1911-12	596
PLATE	XLII:	First Conference of the National Medical Association at Shanghai, 1915	604
PLATE	XLIII:	Presidents of the National Medical Associa- tion (since 1932 the Chinese Medical Association)	612
PLATE	XLIV:	DR. WANG CHUNG-YIK (1888-1930)	628
		DR. TING FU-PAO (1873-)	628
		DR. HOUKI HU (1894-1932)	628
PLATE	XLV:	Peiping Union Medical College, opened 1921	636
PLATE	XLVI:	Peiping Central Hospital	650
PLATE	XLVII:	A modern health poster on apoplexy with forceful illustrations and simple Chin- ese text in 6 columns, designed by DR. WU LIEN-TEH, 1929	724

		<i>Facing Page</i>
PLATE	XLVIII: Staff of the National Quarantine Service, Shanghai, 1934	730
PLATE	XLIX: First students of DR. HU KIM-ENG, Foochow WANG SHU-CHEN, M.D., Johns Hopkins (1899-) right, was head of her class in America on several occasions	750 750
	DR. MARION YANG (1892-).. .. .	750
PLATE	L: Group of old-style midwives, Peiping, who have been taught modern methods, 1929	754
PLATE	LI: The new Army Medical College, Canton, completed in 1936, with facilities for training 300 students	792
	Bird's eye view of the Canton Army Medical College and Hospital opened in 1936..	792
PLATE	LII: Aerial view of Central Hospital, Nanking (foreground) and Central Field Health Station building in the background..	810
PLATE	LIII: Chung San Memorial Hospital (500 beds) nearing completion, Oct. 1936—unit of the new Shanghai Medical Centre which occupies an area of 130 <i>mou</i> at Feng-ling-chiao, Shanghai	820
	New building of the National Medical College at Feng-ling-chiao, Shanghai— part of the Shanghai Medical Centre, completed in 1936.. .. .	820

CHAPTER I

BEGINNINGS OF CHINESE HEALING ART

The early history of China abounds in myths and legends. It is said that the first living being on earth was P'an Ku (盤古), who is represented in pictures with mallet and chisel bringing the rude masses of chaotic matter into shape. Some describe him as a dwarf clothed in bearskin, or merely in leaves or with an apron of leaves, and having two horns on his head. Other legends relate that he had the head of a dragon and a serpent's body, and that by breathing he caused the wind, and by opening his eyes he created day. He is also shown as being attended in his task by four supernatural creatures—the unicorn, phoenix, tortoise and dragon; others again draw him with the sun in one hand and the moon in the other, some of the first fruits of his stupendous labours. It is said that heaven was his father and earth his mother, and that he was consequently named the Son of Heaven(1). The cosmogonists have improved upon this representation of a First Being with marvellous additional embellishments. His task took him 18,000 years to complete and when his work was done he gave up his life for the benefit of the world. His head was transmuted into mountains, his breath into wind and clouds, his voice into thunder, his left eye into the sun, and his right eye into the moon; his muscles and veins into the strata of the earth, his flesh into the soil, his hair and beard into the constellations, his skin and the hairs thereon into plants and trees, his teeth and bones into the metals, his marrow into pearls and precious stones, the sweat of his body into rain, and the parasites upon him impregnated by the ether into the human species(2).

This Taoist account differs from that given by the Buddhists. The creation myth of P'an Ku is, however, of comparatively late origin, and is supposed to date from the fourth century A.D. According to Jen Fang (任昉), the myth was brought to China by some emissaries when they returned from Siam, in the sixth century A.D., and was only inserted in the *Wai Chi* (外記) in the eleventh century by Liu Shu (劉恕).

(1) *Feng Chou Kang Chien* 鳳洲編年 by Wang Shih-chen 王世貞.

(2) 廣博物志 *Kwang Po Wu Chi*, Record of Natural Science by Tung Szu-chang 黃斯張 of the Ming dynasty.

After the creation some 500,000 years are supposed to have elapsed until the ascension of Fu Hsi (伏羲), the founder of the Chinese nation. And during that vast period there are countless myths and traditions describing the origin of the manners, customs, medicine, arts and industries, etc. of the people. Anthropologists, however, tell us that the primitive peoples all over the earth have practically the same myths, customs, beliefs and superstitions, differing only in unimportant details. It was through long space and time that human races and racial customs have changed as they gradually evolved from a lower and plainer life to a higher and more complex development. Like the primitive folks of other races, the Chinese in this early stage of existence lived in caves, ate wild fruits, drank the blood of animals, and covered their loins with the skin of animals. They had to fight against wild beasts and sometimes got hurt or wounded. The meals being irregular, the food coarse and uncooked, and the body exposed to all kinds of weather, stomach troubles and other diseases naturally followed. As the most universal symptom of disease, the first indication of something wrong with the living organism is pain, to seek and to apply remedies for it is the most primitive of the primeval instincts. An injured dog licking its wound or seeking certain grasses and herbs when sick, a child stretching its cramped limbs or scratching its irritated body show instinctive responses towards removing these evils. And such instinctive reactions are the origins from which definite curative systems have arisen during the evolution of every community.

As illustrative examples we may mention massage which was evolved from the instinctive action of rubbing, stroking and kneading to sooth an injured or stiff limb. The Chinese have developed this method to a high degree of excellence perhaps never equalled by any other race. The commencement of surgery dates from the moment when instruments of daily use were employed as means of healing. With such articles as thorns, fish bones, shells, flints, etc. an abscess could be opened and also blood let out. Moxa, cupping, cautery and puncture were practised as far back as the Stone Age. The *Su Wen* says: "When the seat of trouble is in the muscles employ puncture; in the blood vessels, use moxa; in the tendons, apply cautery(3). In making punctures 'needles' were used. These were originally made of flint but later changed to metal as the result of improvements in manufacture of instruments in the Copper and Bronze Ages(4).

(3) 素問 *Su Wen*, an ancient Chinese medical classic.

(4) 山海經 *Shan Hai Ching* or Hill and Sea Classic: In the Kao Shih Mountain there are plenty of jade above and flints below; in the Tao Li mountain there are plenty of gold and jade above and flint below. Kuo P'o says the flint can be shaped into needles to open boils and abscesses.

Relics of this method are still found in the country districts where broken pieces of pottery are used in cutting the umbilical cord instead of scissors. 'Needling' occupied a rather important position in ancient times. It developed into the art of acupuncture which is now highly specialized, forming one of the characteristic branches of Chinese medicine.

As primitive man advanced a little further in the knowledge which is gained from experience, it was natural that he soon perceived that physical measures could not cure every ailment, especially internal complaints. Chance and empiricism led him to try various herbs and food as remedies till gradually a considerable number of such simples were discovered. The classics, *Shu Ching* (5), *Shih Ching* (6), *Chou Li* (7), *Shan Hai Ching* (8), contain many names of plants and animals used as medicine, but not very many exact data, for these names are often uncertain. In the *Shan Hai Ching* more than eighty such substances are enumerated, including various kinds of fishes, fowl, flesh of animals, herbs, vegetables, barks, etc. (9). Two salient features are brought out, namely: (a) The people of this period have just emerged from the hunting and fishing stage and are entering into the newly formed agricultural society, for most of the things listed are derived from the animal kingdom as compared with the time of Shen Nung when vegetable drugs formed the main source of remedies. (b) Although the great majority of the substances are to be taken internally, yet a considerable proportion of them are to be worn by the patient, which shows the deep hold medical magic had on the minds of the people.

Greek and Roman writers have handed down a number of fables according to which we owe many therapeutic means and measures to animals. The Chinese have a rich store of such tales. Thus it is related that the deer, when sick, eat *wei hsien* (薇銜) (10) (*senicio palmatus*); dogs, having overeaten, seek *tao yeh* 稻葉 (corn stalks); rats, when poisoned, drink muddy water; cats and spiders eat, as antidotes to bee-sting, *wa sung* (瓦松), the grass that grows on the roof (11); birds, when their beaks get stained by poisonous berries, peck at the roots of *sheng ma* (升麻) (*actea spicata*) (12); the tiger,

(5) 書經 *Shu Ching* or Books of History.

(6) 詩經 *Shih Ching* or Book of Odes.

(7) 周禮 *Chou Li* or Rituals of the Chou Dynasty.

(8) 山海經 *Shan Hai Ching* or Hill and Sea Classic.

(9) Chung Ching-wen's Ancient Ideas of Medicine of the Chinese, gives a full list of these substances as contained in the Hill and Sea Classic.

(10) 薇銜 This herb is mentioned in the various ancient materia medicas as well as in the *Su Wen*, Chapter Ping Nen.

(11) 中國醫學變遷史，施天啓著，第一章原始醫學

(12) 水經 *Shui Ching*.

when wounded, eats clay; and monkeys, to stop bleeding, stuff a ball of wood leaves in the wound(13). Some of these legends are recorded at great length and the following translations may be of interest to students of medical folk-lore. The *I Yuan* tells us that once a farmer saw a wounded snake lying on the ground while another with a blade of grass in the mouth applied it to the wound. A day passed and the snakes moved away. The farmer gathered the grass left behind and tried it on wounds with good results. Henceforth the herb was named snake grass(14). Another story about snakes trying to cure themselves is found in the *Sung Annals*. It is said that one of the Emperors named Liu Chi-nu (劉寄奴), before he became great and while cutting down a plant, saw a large snake and shot it with an arrow. On the next day he went there and heard the sound of mortar and pestle. When he searched for the source of the sound, he saw several youths clad in green in the hazel thicket grinding some plant for medicine. On being asked why they did this, they replied that their master was shot with an arrow by Liu Chi-nu and that they were now preparing medicine to cure the wound. He asked why they did not kill Liu; the youths replied he would become Emperor and they must not harm him. Liu scolded them and the boys ran away. He picked up the herbs, and whenever he applied them to a wound it got well. Ever after the people called this the Liu Chi-nu herb(15). It may be assumed from the above that some of the foundations of primitive healing have their basis in animal medicine.

But the most important factor in prehistoric healing is the belief in the supernatural. Human knowledge at this stage was extremely limited for primitive man, knowing nothing whatever of physical laws, cause or effect, yet seeking an explanation of the workings of nature, described them in the only way possible to him. He attributed to all inanimate objects his own sentiments and passions, fancying them influenced by the same things in the same way. This tendency to personify or animate everything is universal among savages; and in early philosophy throughout the world all natural phenomena are alive and, as it were, human in their nature. He was frightened by the flash of lightning, the eruption of an earthquake, the crash of thunder. The sun, moon, stars, clouds, storm and fire were to him the outward manifestations of gods, demons, devils, spirits or other supernatural agencies. Consequently health and

(13) 蜀志卷十五 *Topography of Szechuan*, Vol. 15.

(14) 異苑 *I Yuan*.

(15) Different versions of this story are also found in the *I Yuan* 異苑, *Shu I Chi* 述異記, and the *Kuei I Fang* 鬼遺方. Stuart's *Chinese Materia Medica* identifies this plant as *solidago virgo-aurea* or golden rod.

disease were thought to be controlled by them and diseases, in particular, were regarded as the work of devils or were devils in temporary possession of the human body, which would only be cured of its infirmity when the intruders were evicted by the application of appropriate incantations, charms, and other superstitious practices.

Indeed the number of these devils, as they increased down the ages, multiplied to such an extent that current Chinese traditions have almost one particular devil for each disease. For example, nightmares are supposed to be caused by the fox ghost, pains in the abdomen by the house god. The devil of neuralgia uses an iron band which he forces on one's head producing that terrible pain. The god of thunder employs a hammer and chisel to strike one down. There are the water spirits to entice a person to the water; the wicked devils to snatch away the souls of children; and the demons of malaria, three in number, one with a bucket of cold water to give the chills, another with a stove to set up the fever, and a third with a hammer with which to knock the head producing headaches(16). It follows that with the beginning of superstition primitive healing art, instead of the crude herb-therapy, became an affair of charms and spells, incantations and offerings. And out of these we have the advent of the witch doctor, faith and nature healers, and other quacks who profess to cure sickness by all sorts of miraculous devices.

(16) K. C. Wong: *Chinese Medical Superstitions*, Nat. Med. J1. China, Vol. 2 and 3.

CHAPTER II

FOUNDERS OF CHINESE MEDICINE

As ancient Chinese history is supposed to begin with the age of the Five Rulers it is natural that some of these legendary characters are also regarded as the founders of Chinese medicine. Three of them—Fu Hsi (伏羲), Shen Nung (神農), and Huang Ti (黃帝)—are always classed together, forming a medical trinity. They are worshipped in all temples of medicine throughout the country.

Fu Hsi, also known as Pao Hsi (庖犧), who lived 2953 B.C. with the dynastic appellation of T'ai Hao (太昊), was the first of the Five Rulers of this legendary period. He is said to have been miraculously conceived and was born after 12 years' gestation. He invented picture symbols, established rules of marriage, taught fishing and rearing of domestic animals, cooking of food, making of musical instruments, etc. But his connection with medical history chiefly rests on his construction of the *Pa Kua* (八卦) or *Eight Diagrams* on which were based the *I Ching* (易經) or Book of Changes and the principles of medical philosophy.

The accepted founder of Chinese medicine, however, was Shen Nung, the Divine Husbandman, who reigned 2838-2698 B.C. According to the *San Huang Pen Chi* (17) he was the son of a princess named An-teng (安登), who conceived through the influence of a heavenly dragon and bore her child, the future sovereign, near the Chiang-shui (River Chiang) whence he derived his surname. He is likewise called Lieh-Shan Shih (烈山氏), from the mountain Lieh Shan, where he is said to have lived. He reigned by the influence of the agent Fire, and is consequently entitled Yen Ti (炎帝) or Fire Emperor. He first fashioned timber into ploughs, and taught the people the art of husbandry. He discovered the curative virtues of plants, and instituted the practice of holding markets for the exchange of commodities. The extension of the eight diagrams of Fu Hsi to the number of sixty-four symbols is likewise attributed to his inventive genius. Like Mithridates, King of Pontus, who achieved a reputation in the art of taking poisons, he is said to have tasted

(17) 三皇本紀 *Records of the Three Emperors.*

seventy different kinds of poisons in a single day and established the art of medicine(18).

To him is usually ascribed the writing of the *Pen-Ts'ao* or *The Herbal*, which is supposed to be the earliest treatise on medicine. Unquestionably the ancients knew the properties and uses of many plants, but this book could not have been composed by him for the term "pen ts'ao" was only first employed in the reign of Han P'ing, A.D. 1-5. The style of writing and the references contained in it all point to its being a product of about the first century B.C.

The *Pen-Ts'ao* is a little work of three "chuans" or volumes. Its original texts are no longer known to us except through the quotations of various commentators. Of the 365 drugs enumerated, about 240 belong to the vegetable kingdom. They are classified under three main groups, 120 being listed as "superior," 120 as "medium" and 125 as "inferior," the total corresponding to the number of days in a year. The superior drugs are supposed to be non-poisonous, possessing rejuvenating properties and can be taken for long periods without harm. The medium drugs are said to have tonic effects, their toxicity depending on the dosage. The inferior drugs are only employed for curing disease, being considered poisonous and should not be taken for any length of time(19).

Shen Nung is worshipped by native drug guilds as their patron god. On the first and fifteenth day of each month incense and offerings are put before his shrine. A ten per cent discount on all drugs is usually given on these dates. In most cities a temple of medicine is erected to perpetuate his memory. He is venerated as the Father of Medicine(20).

Huang Ti (黃帝), the Yellow Emperor, 2698-2598 B.C. is another noted character in Chinese healing art. With the aid of the sage physician Ch'i Pai (岐伯), one of his ministers, he is said to have written the famous classic *Nei Ching* or Internal Classic. Hence the medical profession is sometimes spoken of as the art of Ch'i and Huang. But historical researches proved that this work was not composed by him but was a later production most probably written about the end of the Chou dynasty. The legends relating to this sovereign, although agreeable in their general tenor, are diverse as regards their origin and in many details. It is said that he was the offspring of a miraculous conception on the part of his mother Fu Pao (附寶), and that being born near the river Ki (姬) this title

(18) 淮南子修務訓篇 *Huai Nan Tzu*.

(19) *Pen Ts'ao Kang Mu* or the Great Herbal, a standard work on materia medica.

(20) For a detailed description of the temple at Peking consult Dudgeon's *Chinese Art of Healing*, Chinese Recorder, Vol. II & III.

was taken as his surname, to which the name Hsüan Yüan (軒轅) was added with reference to a hill near which he dwelt. He was also surnamed Kung Sun (公孫) in virtue of his descent; whilst, from the fact of his inheriting the principality of Hsiung (熊)—the Bear—he was also denominated 有熊氏. When Ch'ih Yao rose in rebellion and overthrew the Emperor Yü Wang (榆罔), the princes of the land elected him to the throne. Reigning under the influence of the element Earth, he became known by the designation of its allotted colour (yellow). Under his instruction, Ta Nao (大撓) arranged the cyclical period called *chia tzu* (甲子), and Yung Ch'eng (容成) constructed astronomical instruments and composed a calendar. Li Shou (隸首) invented for him the art of mathematical calculation, and Ling Lun (伶倫) by his order obtained bamboos from the country lying on the west of Ta Hsia (大夏) and arranged the system of modulated sounds. Yung Yüan (禁獵) was commanded by him to make twelve musical bells for denoting the seasons, and Ta Yung (大容) composed the musical air to which the title Hsien Ch'ih (咸池) was given.

Huang Ti regulated costume, taught his people how to manufacture utensils of wood, pottery and metal, commanded Kung Ku (共鼓) to build boats and wheeled vehicles, constructed a palace and invented a medium of currency. He mapped out his empire into provinces and divided the land into regular portions.

Other fables had it that he visited most of the immortals and obtained his knowledge of medicine from them. The True Middle Emperor gave him the formula of the "nine gourd powder"; the little spirit Huang Kai handed him the "nineteen gold and silver prescriptions." He went to see the two goddesses, Scarlet and White, in the Golden Valley, and then composed the chapters on diagnosis and the pulse. He invented the nine needles for acupuncture and wrote a treatise of 18 volumes on medicine and surgery. Finally he secured the prescription for making the "nine tripod pills." He set up a stove to prepare this medicine. Thousands of tigers and leopards came to take care of the fire for him. When the pills were finished a yellow dragon descended from heaven to conduct him to paradise. About seventy of his most faithful ministers and concubines followed in the train, the lesser officials being left behind. He died at the age of 111 years (21).

Associated with Huang Ti in his medical task were several of his able ministers of whom the following may be mentioned:

(a) Chiu Tai-Chi (仇貸季) was the teacher of Ch'i Pai. He specialized in the pulse.

(21) 路史 *Lu Shih*.

(b) Ch'i Pai (岐伯), the most famous of Huang Ti's assistants, tested the actions of drugs, cured the people's sickness, and wrote books on medicine and therapeutics.

(c) Kuei Yu-Ch'ü (鬼臾區) composed the Essay on the Origin of Nature, one of the chapters of the *Nei-Ching*. It is also said that Huang Ti sought his advice when he secured the Precious Tripod.

(d) Lei Kung (雷公), a pupil of Huang Ti. The seven chapters beginning from the Essay on Chi Chiao in the *Nei-Ching* were supposed to be from his pen. A book on the art of dispensing was also attributed to him.

(e) T'ung Chün (桐君) concocted medicinal philters and delved in alchemy.

Other mythical doctors of this period were:—

Yu Fu (俞跗), a skilful surgeon. He did not administer decoctions but cut open the skin, dissected the muscles, severed the blood vessels, tied the tendons, and even washed the stomach and cleansed the intestines (22).

Wu Hsien (巫咸), a prime minister of the Shang dynasty. He was also physician to Emperor Yao. He could cure sickness and invoke blessings for the people by incantations. So weird were his powers that trees withered and birds dropped from their perch at his mutterings (23).

Ma Shih-Huang (馬師皇), a veterinary surgeon. He was an expert in treating horses. One day a dragon with drooping ears and gaping mouth came to him for treatment. He punctured his lips and mouth and administered a decoction of liquorice, whereupon the dragon recovered. Thereafter many dragons came to him for medicine and one day they carried him away no one knows where (24).

I Yin (伊尹), the faithful and able prime minister of Emperor T'ang, founder of the Shang dynasty 1783 B.C. He is credited with having first dispensed medicinal elixirs.

The question as to who was the founder of Chinese medicine has given rise to some discussion. Doctors of the old school naturally support the claims of Shen Nung but modern writers like Lu Ch'ien (25), Fan Tien-P'an (26), Li T'ao (27), and Chung Ching-Wen (28) discredit him on the ground that he was a fictitious character

(22) 史記扁鵲傳 *Shih Chi P'ien Ch'iao Chuan*, or Historical Records, biography of Pien Ch'iao.

(23) 世本 *Shih Pen*

(24) 列仙傳 *Lieh Hsien Chuan*, or Lives of the Immortals.

(25) 虞謙: 明辨醫話

(26) 范天翊: 中國醫學變遷史, 國醫評論一卷一期

(27) 李壽: 中國醫學之起源, 國學週刊集六卷一期

(28) 鍾敬文: 我國古代民衆關於醫藥學的智識, 民衆教育季刊二卷一期

not based on any historical evidence. In old Chinese literature at least three persons—Fu Hsi, Shen Nung and Huang Ti—have been named respectively as being the first individual to test the properties of plants and establish the art of healing. According to the *Ti Huang Shih Chi*, Fu Hsi, after inventing picture symbols and the eight diagrams, directed his attention to the phenomena of the six kinds of air and organs, five viscera and elements, the Yin and Yang principles, the four seasons, the ascending and descending fire and water, and the theory of diseases. He further tasted the various herbs and invented the nine needles to cure the people(29). The *Lu Shih* gives a similar account(30). The *Shih Chi Kang Chien* says that Shen Nung tasted the different herbs and this was the beginning of medicine(31). *Huai Nan-tzu* states that Shen Nung taught the people, tested the properties of plants, taking 70 poisons daily, and from this the art of healing began(32). But the *T'ung Chien Wai Chi* records that because the people did not know the remedies when sick, Yen Ti (Shen Nung) began to taste the flavour of grass and bark. He took 12 poisons a day, wrote various recipes for treating diseases, thus laying the foundations of medicine(33). In the *Shih Chi San Huang Pen Chi* it is related that Shen Nung pounded the plants with a red stick, tested their properties, and this was the beginning of medicine(34). The *Ti Huang Shih Chi* records that Yen Ti Shen Nung, who was born near the river Chiang, was the first to teach the people how to grow corn and vegetables as food so as to minimize the taking of animal life. He tasted the trees and herbs, discovered their curative virtues, and composed the *Pen-Ts'ao Ching* in four volumes. This story is couched in somewhat the same words in the *Sou Shen Chi* (35). The *Ti Huang Shih Chi* also says that Huang Ti and Ch'i Pai tasted the different herbs, composed the *Pen-Ts'ao Ching* and wrote prescriptions for curing the people's sickness.

Out of the foregoing references, six give credit to Shen Nung, two to Fu Hsi and one to Huang Ti. The important point, however, is not who receives the largest number of notices but whether or not the records are reliable. Investigation reveals the fact that all these quotations are not from authentic history. The *Ti Huang Shih Chi* is composed by Huang Fu-mi, an ardent taoist, whose writings are of

(29) 帝王世紀 *Ti Huang Shih Chi*.

(30) 路史 *Lu Shih*.

(31) 史記綱鑑 *Shih Chi Kang Chien*.

(32) 淮南子修務訓 *Huai Nan Tzu*.

(33) 通鑑外記 *Tung Chien Wai Chi*.

(34) 史記三皇本紀補 *Shih Chi San Huang Pu Chi*.

(35) 搜神記 *Sou Shen Chi*.

little value from the historical standpoint. The *Lu Shih* by Lo Pei of the Sung dynasty is a much later production and suffers from the same drawback. While the *Shou Shen Chi* is purely a collection of myths, the *Huai Nan Tzu* is more in the nature of a philosophical treatise than recognised history. It is true that the *San Huang Pen Chi* is included in the *Historical Records* but this is only a supplement added by Szu-ma Ching and not from the pen of the great historian Szu-ma Ch'ien. Moreover, it is impossible for Shen Nung to have taken "seventy poisons" daily and not to have died of their effects. Hence, later writers like Liu Shu of the Sung dynasty reduced this number to twelve (36). What was termed "poison" need not necessarily have been poisonous in the modern sense of the word.

The above deals with what may be termed the traditional heads of Chinese healing. They are more or less fabulous characters whose very existence is open to serious doubt. Similar creations are met with in the early history of every nation. Lecius, a metaphysician of the 4th century B.C., has well said: "Who can tell what happened in prehistoric times? All records have been lost. Events of the Three Sovereigns are shrouded in obscurity; of the Five Rulers nothing definite is known" (37). It may be remembered that no system or institution can be established by an individual or in a short time. They are usually the product of collective efforts through a long process of development. Certain personages may tower above their fellow men and be given all credit, but it requires the continued support of a large number of people to bring a system into form. Thus it is impossible to ascribe any accomplishments to a particular individual, especially when the records are from questionable sources. Mencius has laid down a good principle when he says: "It is better not to have the *Book of History* if we believe everything in it" (38). This would be the correct attitude when studying the ancient history of any country.

(36) 宋劉恕通鑑外記 *T'ung Chien Wai Chi* by Liu Shu of the Sung Dynasty.

(37) 列子 *Lieh Tzu* or Lecius.

(38) 孟子 *Meng Tzu* or Mencius.

CHAPTER III

RELATIONSHIP BETWEEN RELIGION AND MEDICINE

In primitive society all matters, both public and private, were closely related to religion, the tribal chief being the high priest at the same time. He was looked upon by the common folk as their intercessor between heaven and man. To him the power of commanding the wind, rain, demons and gods and of bringing blessing or disaster upon his people was ascribed. Legend has it that Huang Ti was able to call together the hundred spirits and order the ten thousand souls to meet at the Hall of Light. He could also transform his body and ride through the clouds to paradise. We have another illustration in the story of Emperor Tang. After his ascent to the throne there was a severe drought which lasted for seven years. He then offered his body as a sacrifice, cutting off his hair and nails, wearing sack cloth and putting on a white head gear. He prayed at Shang Lin and heaven poured down heavy rains (39). The philosophers Mo Tzu and Hsün Tzu commented that these kings took advantage of their supposed powers to fool the people in order to secure their support for the throne (40).

The sorcerer or priest in those early times occupied a most important position. As knowledge was extremely limited and human relationship quite simple it may be inferred that there were only two kinds of recognized occupations—those of the scribe and the sorcerer. During the Yin dynasty all government, worship, sacrifice, astrology, divination, healing, etc. were in the hands of the priests or sorcerers. Their powers were unlimited and their influence extended to every walk of life then extant. Ancient history, in fact, was but a chronicle of the activities of these people. At the close of the Chou dynasty, with the advance of civilization, their hold gradually declined and they were replaced by the scribes.

The healing art at this early stage consisted chiefly of divination, incantation, sacrificial offerings, propitiations, magic, prayer and other superstitious practices. The profession, if such it may be called, was entirely under the control of the sorcerers, as can be seen from the

(39) 史記封禪書

(40) 墨子兼愛篇, 荀子大略篇

term "Wu I" (巫醫) (priest-doctor), two characters which are frequently used together. The following quotations from ancient literature may be cited in this connection:

If one has no perseverance one cannot even be a priest-doctor (41).
 Priest-doctors employed poisonous drugs to treat and expel disease (42).
 Sorcerer P'eng was the first physician (43).
 Sorcerer Hsien was physician to Emperor Yao (44).
 Sorcerer Hsien practised magic and acted as physician to Emperor Yao (45).

They asked the priest-doctors to kneel down to save him (46).

The people preferred to employ priest-doctors (47).

Emperor Wu having subdued the Yins appointed priest-doctors in every village, keeping a large quantity of medicines for the people's sickness as well as growing a variety of plants for food (48).

To the east of Kai Ming there lived certain sorcerers named P'eng 彭, Ti 抵, Yang 陽, Lü 履, Fan 凡, and Hsiang 相, who were all skilful physicians (49).

Thus religion and astrology merged into healing and, as in all early civilizations, the first doctor was a priest and the first priest a doctor.

It was not until the Chou dynasty 1140 B.C. that the functions of these two professions were officially separated. The *Chou Li*, a classic handed down from the Chou dynasty, lays down that the chief sorcerer shall direct the junior sorcerers to make offerings in times of drought, and that the doctor shall superintend all matters relating to medicine and shall collect herbs for medical purposes (50). Such distinctions, however, were not strictly observed in actual practice for the masses still had great faith in the magical powers of the priests. Even the celebrated Pien Ch'iao was rejected in order to give place to a sorcerer. In this connection it is related in the *Chia Lu Sin Yü* that once, while living in the Sung state, he happened to offend the duke and had to flee to the state of Wei. He heard a man was dying and went to the house to offer his services. Said the patient's father; "My son is seriously ill. I intend to call a famous sorcerer to treat him. It is beyond your ability to give any help" (51). The patient ultimately died. Pien-Ch'iao must have been deeply impressed by this incident

(41) 論語 *Lun Yü* or Analects.

(42) 呂覽 *Lü Lan*.

(43) 說文 *Shuo Wen*, Vol. 14.

(44) 世本 *Shih Pen*.

(45) Preface of *Ode to Wu Hsien*.

(46) 說苑 *Shuo Yüan*.

(47) 管子 *Kuan Tzu*.

(48) 周書大武解 *Chou Shu Ta Wu Chieh* or Chou Annals.

(49) 山海經 *Shan Hai Ching* or Hill and Sea Classic.

(50) 周禮 *Chou Li* or Chou Rituals.

(51) 賈隆新語 *Chia Lu Hsin Yü*.

for among his six famous aphorisms we find one to this effect: "A case is incurable if one believes in sorcerers instead of in doctors".

The formation and development of the ancient Chinese character "I" 醫 for doctor throws an interesting sidelight on the art of medicine. It is made up of three component parts. At the top on the left corner is the radical for a quiver of arrows or chest of arms 醫; on the right corner a hand grasping a weapon 攴; below is the symbol for sorcerer or priest 巫. The complete character denotes that the priest employs strong weapons to kill or drive away the demons of sickness. Later, however, the third part of the symbol was changed to wine 酉, signifying that the practice of medicine was no longer confined to the priests but had been taken up by doctors who administered elixirs or wines to their patients. The modern character is 醫.

Marvellous powers were attributed to these medical priests. Miao Fu treated patients by simply looking toward the north and uttering ten words. Then all who came to him were cured (52). Yu Fu did not use herbs, but took a piece of wood to make the brain and a bundle of straw to form the body. He blew some breath into this manikin and the dead revived (53). Wu Hsien was so powerful that trees withered and birds dropped dead by his incantations (54). Faith-healing was often employed. According to the *Su Wen* the primitive methods of healing consisted mainly of diverting one's thoughts and changing one's environment which could be accomplished by prayer alone (55). The priests of old knew the essential points of a disease, whence it came, and utilized faith to combat the evil (56). This method was resorted to even by the intelligent classes. The *Book of History* records that King Wu contracted a severe illness. Duke Chou prayed before the spirit of his ancestors offering his own virtuous acts to the gods as atonement for his brother's recovery (57). When Confucius was sick his disciple wanted to pray for him. In the words of the *Analects*: "The Master being sick, Tzu Lu asked leave to pray for him. He said, "May such a thing be done?" Tzu Lu replied, "It may. In the prayers it is said that prayer has been made to the spirits of the upper and lower worlds". The Master said, "My praying has been for a long time" (58). Medical practice during this ancient period, therefore, was chiefly a matter of spirits and demons, charms and incantations, plant-lore and psychotherapy.

(52) 說苑 *Shuo Yüan*.

(53) 韓詩外傳 *Han Shih Wai Chuan* or Biography of Han Shih.

(54) 世本 *Shih Pen*.

(55) 素問移精變氣篇 *Su Wen*, chapter on Changing the Spirits and Air.

(56) 素問賊風篇 *Su Wen*, chapter on Evil Winds.

(57) 書經金縢篇 *Shu Ching*.

(58) 論語子路篇 *Confucian Analects*, Chapter on Tzu Lu.

CHAPTER IV

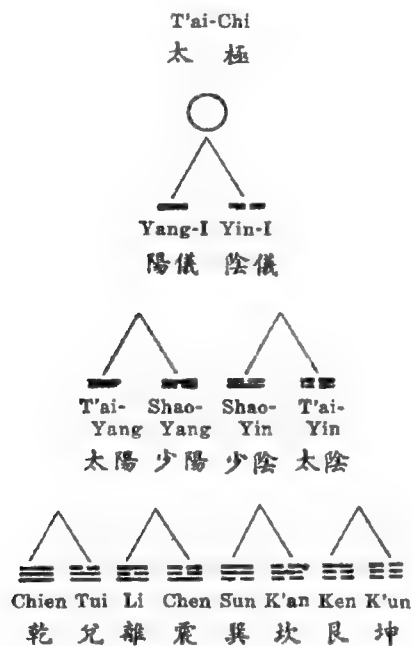
THE PHILOSOPHY OF DISEASE

Reliable history does not go further back than the middle of the Chou dynasty, 722 B.C., which is one of the most glorious periods in Chinese history. Literature, art, religion, philosophy, government and all that is usually included in the term civilization flourished and reached a high degree of development. This dynasty is rightly represented as the age of philosophy for Kuan Tzu (管子), Chuang Tzu (莊子), Lih Tzu (列子), and most of the famous philosophers were found at this period. Towering above all these were Lao Tzu (老子), Confucius (孔子), and Mencius (孟子), three of the greatest characters of China. Never before or since have so many men of genius appeared in the same narrow limits and space of time. Their influence was so great that it was felt in every branch of literature. Thus we find medicine no longer an effective, practical, though restricted art, based upon observation and knowledge. Rather do we see, masquerading under its name, pretentious systems of healing carried to absurd and extravagant lengths; elaborate systems of theoretical knowledge which, ever developing in complexity without gaining in meaning, have tended to become less and less effective in practice. The study of medicine was dominated by the scholastic subtleties of visionary philosophers and was characterized by reverence for authority, petrified formalism and a pedantic excess of detail. As a result of these varied speculations on the theory and causation of diseases there were evolved two doctrines which formed the basis of the whole of Chinese medicine.

The first is the Doctrine of the Two Principles called *yin* (陰) and *yang* (陽). Everything under the sun is supposed to originate from them. The *I Ching* (易經) states that the *T'ai-Chi* (太極) or infinite void, represented by a dot, was generated by the *Wu-Chi* (無極), which was without form. The *T'ai-Chi* then generated the two *I* (儀) or symbols, which are distinguished as *yin* and *yang*. The *Yang-I* is represented by a continuous straight line and the *Yin-I* by a broken line. From the two *I* were generated the four *Hsiang* (象), or figures, which are called *T'ai-yang* (太陽), *T'ai-yin* (太陰), *Shao-yang* (少陽), *Shao-yin* (少陰). By similarly combining the four *Hsiang* the *Pa-Kua* (八卦) or Eight Diagrams are produced. Their

names are *Chien* (乾), *Tui* (兌), *Li* (離), *Chen* (震), *Sun* (巽), *K'an* (坎), *Ken* (艮), and *K'un* (坤).

The following illustration will perhaps explain this more clearly.

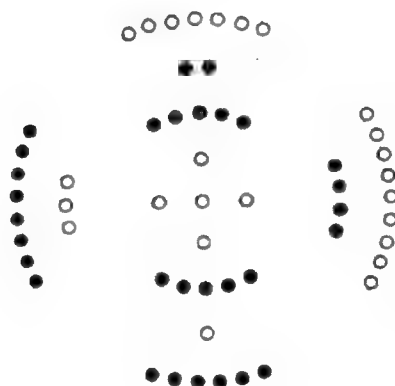


The *Pa-Kua* is supposed to date from Fu Hsi, the plan being revealed to him on the back of a supernatural animal called a 'dragon horse', that rose from the waters of the Yellow River. This is known as the "River Plan" (河圖) to distinguish it from the "Lo Scroll" (洛書), discovered by Yü (禹), who, while engaged in draining off the floods, saw a 'divine tortoise' with marks on its back which formed the basis of a new system of diagrams. The diagrams of Fu Hsi are the nucleus of the famous *I-Ching* (易經) or Book of Changes. It is said that Wen Wang (文王), while in prison, wrote sixty four explanatory essays on this subject. The explanations, entitled *tuan* (象), with certain further observations termed *hsiang* (象), which are attributed to Chou Kung (周公), son of Wen Wang, constitute the Chou-I (周易). Confucius added a commentary to the above and all these together form the *I-Ching*, which is regarded with the utmost veneration by all Chinese. The *Pa-Kua* has been used for at least two thousand years to interpret the process of nature and is the fundamental feature in the theories which underlie philosophy, astrology,

divination and medicine. It is also spoken of as the parent of mathematics and of written characters.

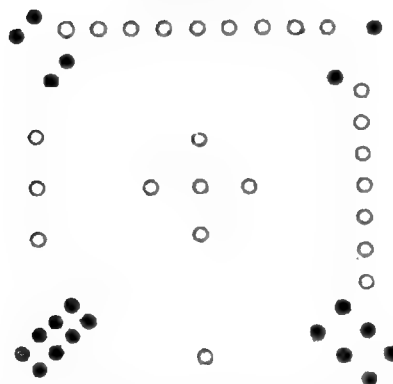
The River Plan

河圖



The Lo Scroll

洛書



The Pa-Kua in use at the present time is arranged differently from the original. It is generally represented by a circle which is divided into two pear-shaped bodies by a double curved line. Attendant upon these diagrammatic elements are the eight symbols, a series of triple lines—whole and broken—arranged in such a manner as not to repeat the combination. This forms a common charm or talisman and is employed in divers ways to ward off evil influences.

Each of these lines has a special name with a symbolic and fanciful meaning. Scholars of every age have busied themselves with speculative interpretations of these mystic diagrams, but in spite of thousands of expositions the meaning of the symbols remains obscure. Confucius was greatly enamoured of these figures and said that if he could devote fifty years to their study he might attain wisdom. They are generally interpreted as follows:—



Diagram of the Pa-Kua

- Yang-I (陽儀), the symbol of the *yang* principle, corresponding to light, heaven, masculinity, etc.
- Yin-I (陰儀), the symbol of the *yin* principle, corresponding to darkness, earth, femininity, etc.
- ≡ T'ai-yang (太陽) or great *yang*, corresponds to the sun, heat, the mental disposition, the eyes, that which is first or greatest, and that which is imperial.
- ≡≡ T'ai-yin (太陰) or great *yin*, corresponds to the moon, cold, the passions, the ears, that which unites, the divine sovereign.
- ≡ Shao-yang (少陽) or lesser *yang*, corresponds to the stars, daylight, the outward form, the nose, revolving motion, a rightful prince.
- ≡≡ Shao-yin (少陰), or lesser *yin*, corresponds to the planets, night, the bodily frame, the mouth, successive generations, usurping or belligerent rulers.
- ≡≡≡ Chien (乾), the *yang* or active principle in nature, heaven, ether, the north west point of the compass.
- ≡≡≡ Tui (兌), water, fountains, ascending vapour, lightness, the west.
- ≡≡≡ Li (離), fire, light, heat, warmth, life, the south.
- ≡≡≡ Chen (震), thunder, igneous exhalations, the quickening power of nature, the east.
- ≡≡≡ Sun (巽), the wind, expansive energy, flexibility, the south east.
- ≡≡≡ K'an (坎), water, the liquid elements, rigidity, cold, the north.
- ≡≡≡ Ken (艮), mountains, what sustains, solidity, gravity, quiet, the north east.

☷ K'un (坤), the earth, the *yin* or passive principle in nature, complaint, accord, drought, the south west.

Thus the *yang* and *yin* principles represent the two great forces—male and female—but in a most comprehensive form. They stand for heaven and earth, the sun and the moon, day and night, heat and cold, life and death, positive and negative, strong and weak, spiritual and material, acid and base, left and right, broad and narrow, straight and crooked, energy and inertia, active and passive, red and black, plain and complex, joy and worry, justice and mercy, high and low, good and evil, lucky and unlucky, round and square, long and short, light and heavy, etc. corresponding to Ahura-Mazda and Ahriman of the Zoroastrians, Osiris and Isis of the Egyptians, the even and the odd of Pythagoras. In medicine everything is classified under these two main divisions. On the human body, the skin or surface is *yang*, the interior *yin*; the back is *yang*, the abdomen *yin*; the hollow organs are *yang*, the solid organs *yin*. Of the five viscera the heart and liver are *yang* organs and the spleen, lungs and kidneys are *yin* organs. Within the *yang* there is also something of *yin*, and within the *yin* there is likewise something of *yang*. Thus while the back is *yang*, the lung being *yin*, it is a *yin* within a *yang*. The abdomen is *yin*, but the liver is *yang*, therefore it is a *yang* within a *yin*. Again the back is *yang* and the heart is another *yang*, so it is a *yang* within a *yang*. Similarly the abdomen is *yin* and the spleen is another *yin*, consequently it is a *yin* within a *yin*. A disease is *yang* when it is due to external causes and *yin* when it is from internal causes. So fever, affections of the upper body, respiratory diseases, when the onset is sudden, when the patient cannot bend his body, are *yang* diseases. Chills, affections of the lower body, circulatory diseases, when the onset is gradual, when the patient cannot lie on his back, are *yin* diseases. A *yang* pulse is strong, bounding and large in volume while a *yin* pulse is weak and of low tension. When the *yin* predominates one suffers from a *yang* disease, when the *yang* is in excess, a *yin* disease results. Excessive *yang* causes fever, excessive *yin* causes chills. Even drugs have this distinction. Stimulants, resolvents, expectorants, pungent substances, and hot decoctions are classified as *yang* drugs. Astringents, purgatives, haematics, bitter substances, and cold infusions are *yin* drugs. So when treating patients these matters should be remembered.

The Doctrine of the Five Elements

The second doctrine is that of the Five Elements (五行) which are metal, wood, water, fire and earth. The human frame is supposed to be made up of a harmonious mixture of these primordial substances. So long as the proportions remain proper health results; but if the balance is disturbed disease follows. The five elements

again interact on each other, having five generators and five subjugators thus:—

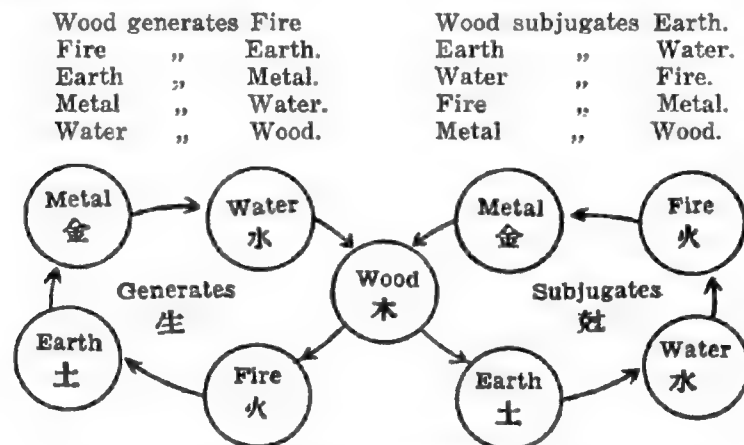


Diagram of the Five Elements interacting on each other

Corresponding with the five elements are the five organs—spleen, liver, heart, lungs and kidneys, which are further related in a complex system of arrangements to the planets, colour, taste, climate, etc. according to the following scheme:—

TABLE OF ORGANS AND THEIR RELATIONSHIPS

	<i>Heart</i>	<i>Liver</i>	<i>Spleen</i>	<i>Lungs</i>	<i>Kidneys</i>
1 Element	Fire	Wood	Earth	Metal	Water
2 Planet	Mars	Jupiter	Saturn	Venus	Mercury
3 Colour	Red	Green	Yellow	White	Black
4 Taste	Bitter	Sour	Sweet	Pungent	Salt
5 Climate	Hot	Windy	Moist	Dry	Cool
6 Direction	South	East	Centre	West	North
7 Odour	Scorched	Rancid	Fragrant	Goatish	Putrid
8 Emotion	Joy	Anger	Desire	Worry	Fear
9 Animal	Horse	Chicken	Cow	Dog	Pig
10 Number	Seven	Eight	Five	Nine	Six
11 Fruit	Apricot	Plum	Date	Pear	Chestnut
12 Sound	Laugh	Shout	Sing	Weep	Groan
13 Grain	Glutinous rice	Wheat	Millet	Rice	Pea.

Each organ is supposed to communicate with some other organs near the surface of the body. Thus the heart communicates with the tongue; the liver with the eyes; the spleen with the mouth; the lungs with the nose; and the kidneys with the ear.

The Chinese apply a system similar to the number-lore of Pythagoras to every aspect of medicine. There are, for example, three souls; three "Shihs" (尸) or germs which reside in the head, in the abdomen, and in the feet. There are four methods of diagnosis

—by observation, by auscultation, by interrogation and by palpation. The number five, however, is by far the most extensively employed. In addition to those already enumerated mention may be made of the following. There are five kinds of afflictions—dumb, deaf, lame, deformed and dwarfed; five kinds of sufferings—birth, senility, illness, death and parting. Many diseases such as gonorrhoea, piles, jaundice and dyspepsia each have five varieties. Injuries are also of five kinds, viz.: over-use of the eyes injures the energy, too much sleep injures the vitality, prolonged sitting injures the muscles, protracted standing injures the bones, and excessive walking injures the tendons. The weather is divided into cloudy, clear, windy, rainy, misty and bright—six varieties. Emotions are of seven kinds, joy, anger, sorrow, fear, love, hate and desire. A girl changes her teeth at seven, menstruates at fourteen, reaches maturity at twenty-one, and attains the height of development at twenty-eight. At thirty-five she begins to decline and at forty-two signs of decay appear. The menses stop at forty-nine. A boy experiences similar changes at fixed periods—at the number of eight and its multiples.

The universe with its dual forces is a macrocosm. Man is a microcosm, a little universe. Thus we read that as heaven is round and the earth square, so a man's head is round and the foot square. As heaven has its sun and moon, its order of stars, rain and wind, thunder and lightning, so man has two eyes, a set of teeth, joy and anger, voice and sound. The earth with its mountains and valleys; rocks and stones, trees and shrubs, weeds and grasses, has its parallel on the human body in the shoulders and armpits; nodes and tuberosities; tendons and muscles; hairs and down. The four limbs correspond to the four seasons; the twelve joints to the twelve months. There are nine "Chous" (洲) or provinces, man has also nine openings, viz.: two ear holes, two eye slits, two nostrils, one mouth, one anus and one urethral opening. There is a brain reservoir, an air reservoir, a blood reservoir and a water reservoir to agree with the four seas. The pulse is of twelve kinds to agree with the twelve rivers. The heart contains seven holes because the ursa major is composed of seven stars, and the human skeleton has 360 bones for the simple reason that there are the same number of degrees in a circle.

CHAPTER V

FAMOUS ANCIENT PHYSICIANS

In addition to the above doctrines there were other theories on the causation of disease. The following anecdotes of a few ancient physicians, as related by contemporary writers, will serve to throw more side-light on the medical thoughts of that period.

Dr. Huan (醫緩). The Marquis of Chin was sick and asked a neighbouring state Ch'in to recommend him a good physician. The Earl of Ch'in sent Dr. Huan. Just before the doctor arrived the Marquis dreamed that two little elfs were having a consultation. One said: Huan is a skilful doctor. I am afraid he will kill us. How can we escape? The other replied: We will hide in a place above the *huang* (膻) and below the *kao* (膈) (the region between the heart and the diaphragm) then what can he do? When Huan arrived and examined the Marquis he said: Your disease is situated above the *huang* and below the *kao*. Puncturing is impracticable and drugs are of no avail. It is incurable. The Marquis then exclaimed: A skilful doctor indeed! Huan was rewarded with a rich present and sent home (59).

Dr. Ho (醫和). Another Marquis of Chin fell ill and the Earl of Ch'in sent Dr. Ho to attend the Marquis. After examining the case the doctor said: Your disease is incurable. It is caused neither by demons nor by food. You are under the spell of female charms which is poisonous like *ku* (蠱). The good minister will die and heaven will not protect him. The Marquis inquired: Are women not to be approached? Ho answered: Only in strict moderation. There are six kinds of weather which give birth to the five tastes, the five colours, and the five sounds. Disease is caused by excess. The six kinds of weather are cloudy, clear, windy, rainy, misty and bright. It forms the four seasons and follows the order of the five elements. If the balance is disturbed dire consequences will result. Excessive cloudiness causes cold diseases, excessive clearness causes hot diseases, excessive wind causes painful limbs, excessive rain causes bowel complaints, excessive mist causes sensuality and excessive brightness causes heart troubles. Now women are related to cloudiness and mist. Excessive

(59) 左傳 *Tso Chuan*, Chapter 13. A similar account is given in the *Sou Shêng Chî* 搜神記 or *Collection of Myths* which stated that the Marquis died within ten days after Dr. Huan's visit.

contact with them produces internal heat ending in *ku* disease. And your Excellency is intemperate. Can you avoid contracting such disease? Ho went out and saw the prime minister Chao Meng. The latter asked: Who is the good minister you allude to? Dr. Ho replied: It is you. For eight years you have been premier and during all this time there has been no revolution and the feudal lords have been at peace. This is very good. But I have heard that a great man who has power and fame will shoulder all responsibilities. Now your master is sick through intemperance. A great disaster is happening to the country and you cannot prevent it. Therefore I say the good minister will die and Heaven will not protect him. Chao Meng again asked: What is this *ku* poison? Dr. Ho replied: It is a disease caused by excessive venery. Chao Meng remarked: A good doctor! He gave Dr. Ho a valuable gift and sent him back to his own country (60).

Dr. Lu (盧). Chi Liang had a friend named Yang Chu. The former happened to contract a disease which grew gradually worse after seven days. His sons were around him, and bewailing his condition, begged him to call in some physicians. Chi Liang said to Yang Chu: My sons are such idiots, will you not sing for me so as to make them understand? Yang Chu then sang:—

What is unknown to Heaven
How can man perceive it?
Blessing comes neither from Heaven
Nor sin from man;
Should I, should you,
Still not know it?
Physicians and sorcerers
Should they know it?

The sons did not know the meaning of the song and finally called in three physicians Chiao (矯), Yü (俞) and Lu (盧). They examined the case and diagnosed as follows:—

Dr. Chiao: You do not regulate yourself both in food and clothing. The disease comes from intemperance in eating and sensuality. Worry and anxiety disturb your mind. Neither fate nor demons are the cause. Though your illness is advanced it can be cured. Chi Liang remarked: But a common physician! and drove him out.

Dr. Yü: Your vitality has been insufficient from the very beginning and the milk was in excess. Your sickness was not formed in one day but has developed gradually and now it is incurable. Chi Liang replied: A good physician! and gave him food.

Dr. Lu: Your illness is caused neither by Heaven, nor by men, nor by demons. At the commencement of your being when your form was conceived it was present in it. What could herbs and minerals

(60) 左傳 *Tso Ch'uan*, Chapter 20. The *Kuo Yü* 國語 also contains this story.

(medicines) accomplish for you? Chi Liang rejoined: A wonderful physician! and gave him rich presents and dismissed him.

Chi Liang's disease suddenly became well of itself (61).

Pien Ch'iao (扁鵲). Of the famous doctors of ancient times Pien Ch'iao was the most widely known. He was the first medical man to be mentioned by historians. Szu-ma Ch'ien (司馬遷), the Herodotus of China, wrote a long biography of him in his *Historical Records*. Contemporary writers also gave descriptions of his remarkable cures. Authors disagree as to his name. Some state that he was a native of Po Hai of the Cheng Kingdom (鄭), his family name being Ch'in (秦) and his personal name Yüeh-jen (越人); others that he came from the Kingdom of Lu (盧), a member of the Pien (扁) family, his own name being Ch'iao (鵲); and still others that he had a bird's beak and a bat's wings, hence his name Pien Ch'iao (扁鵲) (62). It is said that in his youth he had been keeper of a hostelry. Among the inmates was one by name Ch'ang Sang-chün (長桑君) whom he held in high admiration. Ch'ang also recognized the unusual qualities of Pien Ch'iao. After ten years of acquaintance the old man one day called him to his side saying: "I am getting old. I have some medical secrets which I wish to hand over to you but you must not divulge them to others." Pien Ch'iao faithfully promised. The old man gave him a book and a package of herbs with instructions that the medicine was to be taken in *Shang-Ch'ih* water (上池水) (63) for thirty days when the secrets of nature would be understood. After handing over the secret formulas Ch'ang Sang-chün, being a fairy, suddenly vanished. Pien Ch'iao followed the directions and eventually was able to see through the human body revealing the diseases of the internal organs (64). For obvious reasons, he did

(61) 列子力命篇 *Lieh Tzu Li Ming Pien*.

(62) Some thought that he was not a Chinese but an Indian. See Discussions on *Ancient History* 古史研究.

(63) This refers to rain water that has not yet come into contact with the ground, such as dew, water in the hollow of a tree or bamboo.

(64) H. A. Giles in the *Civilization of China* says: "This is an apparent anticipation of the X-rays." Besides the above, three other illuminating references about the X-rays are cited in Chinese literature. The first relates to Hua T'o, the famous surgeon, who is said to have the power of seeing through the human body. The second story is mentioned in the *Hsi Ching Tea Chi* (西京雜記) which gives the dimensions of the square mirror as 4 feet wide and 5 feet 9 inches high. If one puts a hand across the region of the heart and walks towards the mirror, the stomach, intestines and the five internal organs can be plainly seen. The third concerns a man by the name of Yeh of the T'ang dynasty, who is said to have had an iron mirror which could reflect things clearly. By placing the mirror upon the body of the patient any abnormality in the viscera could be seen and treatment prescribed according to the conditions found. On such flimsy evidences it would be too much to assume that they were forerunners of the Modern X-rays.

not let people know of his power and pretended that he could tell a patient's complaint by the method of feeling the pulse.

Tales of his astounding cures and accurate predictions abound in the books of that period. The following are some of them: Chao Chien-tzu (趙簡子) was seriously ill having been unconscious for five days. The officials were greatly alarmed and sent for Pien Ch'iao who pronounced it to be trance, assuring them that there was no cause for worry. He cited the case of Duke Mu (穆) of Ch'in who woke up after having been insensible for seven days. He predicted that within three days the patient would come out of his present state as if he had had a dream. Chao Chien-tzu recovered at the appointed time and presented Pien Ch'iao with 40,000 *mou* of land as a reward (65).

Another time Pien Ch'iao was passing through the Kingdom of Kuo (號) when he heard the prince had died. Arriving at the palace gate he inquired of the official in charge what disease the prince had suffered from. The answer was that, due to suppression of accumulated pneumonia in the system which could not find a way out, death was sudden. Pien Ch'iao announced that he could restore the prince to life, but none at first would believe him. After a long discussion the official was convinced and brought him before the King. He diagnosed catalepsy and ordered his pupil Tzu Yang to apply moxa and acupuncture to several specific spots on the body. The prince eventually came back to life and after two months of treatment regained normal health.

Pien Ch'iao once arrived at the Kingdom of Ch'i (齊) and the ruler, Marquis Huan, treated him as an honoured guest. During the audience he informed the Marquis that he had some latent disease which though superficial at present should be treated early. The Marquis replied that he was not sick. After the departure of Pien Ch'iao the Marquis remarked to the bystanders that doctors were always mercenary. They tried to create something where there was nothing. Five days later Pien Ch'iao on seeing the Marquis repeated his previous warning, saying that the disease had entered the blood system. The Marquis reiterated that he was quite well and felt rather annoyed. Another five days passed and they met again. The doctor told the Marquis that the disease had now penetrated the stomach and intestines and should be attended to immediately. The latter felt displeased and ignored Pien Ch'iao. Again five days passed. This time when the doctor saw the Marquis he backed out. Surprised at this the Marquis dispatched a messenger to enquire the meaning of this. Pien Ch'iao replied: "When a disease was only skin deep it

(65) A *mou* is a Chinese acre (1/6 E. acre). This is perhaps the largest medical fee on record.

may be reached by concoctions and applications; when in the blood system by puncturing; when in the stomach and intestines by alcoholic extracts. But when it had penetrated the bone-marrow what could a doctor do? Now that the disease has lodged in His Excellency's bone-marrow, it is useless for me to make further comments". As he predicted, after five days the Marquis was taken ill and sent for Pien Ch'iao who, however, had already left. The Marquis died.

Szu-ma Ch'ien commented on this case thus: "If men would only pay attention to trivial signs and let the doctor take matters in hand early, then it is easy to bring about a speedy cure. There is such a vast number of maladies while effective remedies are scarce. Therefore a disease is incurable for six reasons. They are: to lead a life of dissipation, to value money more than health, to lack proper food and clothing, to suffer from a fatal illness, to be so emaciated as not to be able to swallow medicine, and to believe in sorcerers instead of doctors. Any one of these reasons present would make recovery difficult".

In the work of Lieh Tzu the following remarkable story is related. Kung Hu of Lu and Ch'i Ying of Chao fell ill, and both asked Pien Ch'iao to treat them, and he did so. After both had become well the physician said to them: "If your disease had entered your intestines from outside, herbs and minerals could have stopped it. You still have an internal disease which develops within your body; shall I attack this too for you?" Both said they first desired to have proofs of this state of affairs. Pien Ch'iao addressing Kung Hu said: "Your will is strong, but your animus weak, hence you are strong in one respect but weak in another. The will of Ch'i Ying is weak but his animus is strong, hence he is weak in thought and dangerous in his designs. If your hearts were exchanged there would be an equilibrium and the result be good." Pien Ch'iao then gave the two persons narcotic wine to drink which made them insensible for three days. He cut their chests open, removed the hearts, exchanged them and put them in again under the administration of supernatural drugs. After their convalescence they felt as before, took leave and returned home. But Kung Hu went to the house of Ch'i Ying for his wife and children were there, but they did not recognize him. Ch'i Ying went to the house of Kung Hu for his wife and children, who equally did not recognize him. As both families began to quarrel they asked Pien Ch'iao for an explanation. Pien Ch'iao explained and the quarrel ceased (66).

Alleged author of the *Nan Ching* (難經) or *Difficult Classic*, a standard work which contains the explanations of 81 passages selected

(66) 列子湯問篇 Lieh Tzu: Chapter on T'ang Wei. The above translation is by Dr. Faber.

from the *Nei Ching* (內經), Pien Ch'iao was well up both in medicine and surgery. Travelling from one kingdom to another he treated people on the way as a specialist on eye, ear, women's or childrens diseases as they happened to be prevalent at the time. His fame was such that at last it aroused the intense jealousy of the court physician Li Hsi (李醯) who caused him to be assassinated. He is generally regarded as the foremost exponent of the pulse lore, indispensable to native doctors for diagnosis.

Pien Ch'iao had two brothers, both of them physicians. The *Hé Kuan-tzu* (鵠冠子) quoted him as saying: "My eldest brother looks at a patient's appearance and stops an illness before it takes form. His reputation therefore is confined to the family. My second brother cures a disease at the very beginning; hence he is known within the village. But I puncture the blood vessels, employ poisonous drugs, and dissect the skin and muscles; so my reputation spreads to the court" (67). He is worshipped by apothecaries and doctors, who offer incense to him as the God of Medicines on the 28th day of the 4th moon, the anniversary of his birth. Taoist books, however, assign him president of the Celestial Ministry of Medicines (天醫院) (68).

It will be noticed from the above that these anecdotes stretched over a period of nearly four hundred years and that he also appeared at the same time in many places quite far apart from each other, which is difficult to explain. This confusion may be accounted for by the fact that there was more than one person with the same name. Pien Ch'iao was an ancient mythical physician and in the Chou dynasty this term was universally applied to all famous doctors, hence the discrepancies. Szu-ma Ch'ien collected all the tales bearing Pien Ch'iao's name from various ancient works and weaved a connected story out of them, being unaware that they referred to several different individuals. For instance, the stories of how he obtained his secrets from Ch'ang Sang-chün and how he restored the prince of Kuo to life, described the Pien Ch'iao of Ch'in Yüeh-jen; while the accounts relating to his prophecy of Marquis Huan's death, Chao Chien-tzu's recovery, and his assassination belonged to a totally different Pien Ch'iao.

(67) 鵠冠子世賢篇 . *Hé Kuan-tzu*, Chapter Shih Hsien.

(68) 太上無極洞悉元天心室懺 , Book 30, pg. 56.

CHAPTER VI

THE NEI CHING OR CANON OF MEDICINE

An epoch-making contribution to medicine was the publication of the *Nei Ching* (內經), *Internal Classic* or *Canon of Medicine*, which is the oldest as well as the greatest Chinese medical classic. What the *Four Books* are to the Confucianists, the *Nei Ching* is to the native doctors. Upon it is built most of the medical literature of China, and so important is it considered by the profession that even at the present time, three thousand years after it was written, it is still regarded as the highest authority. The work consists of two distinct books. The first is called *Su Wen* (素問) or *Plain Questions* and the second *Ling Shu* (靈樞) or *Mystical Gate*. Nothing definite is known of the author or the date of its publication. Tradition ascribed it, without clear historical evidence, to Huang Ti 2698—2598 B.C.

Szu-ma Kuang, in a letter to Fan Ching-jen, remarked: "To state that Huang Ti was the real author of the *Su Wen* is open to serious doubt. The Emperor has to attend to the affairs of the state; how is it possible for him to sit all day long and discuss problems of medicine with his minister Ch'i Pai? The book is written between the Chou and Han dynasties by some one who antedates it so as to enhance its value." Wang Yen said: The *Su Wen* must have been composed before the early Ch'in dynasty while Liu Hsiang thought it was written by Han Fei-tzu. The last statement is obviously incorrect for he mistakes the *Tai Su* (太素) for the *Su Wen*. In the opinion of Sang Yüeh (69), the book was not from the pen of Huang Ti for the terms "ancient" and "mediaeval" were employed which is conclusive proof that it must have been written about the time of early Ch'in or the Warring States. Nieh Chi-fu of the Sung dynasty says: The literary style of the *Su Wen* is not like that of the Three Periods or after the Warring States. It is undoubtedly composed by Prince Huai Nan. Hang Shih-chun (70) alluded to the similarity of names between the twelve arteries and the twelve rivers in the *Ling Shu*, the second book of the *Nei Ching*,

(69) 桑悅素問抄序 *Sang Yüeh Su Wen Ch'ao Hsü or Preface to Sang Yüeh's Su Wen.*

(70) 杭世駿道古堂集靈樞經跋 *Hang Shih Chun Tao Ku T'ang Chi Ling Shu Ching Po.*

which is impossible for no such terms were in existence at the legendary period.

From the geographical names, literary construction, historical allusions and other points of contrast it may be assumed that the *Nei Ching* was published about the end of the Chou or the beginning of the Ch'in dynasty. The contents are naturally much older. Evidently it is not from the pen of a single individual but a compilation by various writers. It sums up the experimental, physiological and theoretical knowledge of all the centuries which preceded it. It is the earliest attempt to systematize the medical thoughts of these ancient times.

The meaning of the titles of the two books which form the *Nei Ching*, is rather obscure. Many interpretations have been advanced but none have met with universal acceptance. The character *Su* (素), according to the dictionary, has the meanings of white, plain, simple, common, usual, original, vegetables or silk; *Wen* (問) means question or conversation. Hence the most plausible explanation is that the *Su Wen* represents the ordinary conversations between Huang Ti and Ch'i Pai. The title for the second book, *Ling Shu*, is comparatively clear: *Ling* (靈) stands for spiritual or mystical; *Shu* (樞) for a pass or gate.

There is also much uncertainty regarding the exact number of volumes in the *Nei Ching*. Eighteen is the usual number given; nine for the *Su Wen* and nine for the *Ling Shu*. But the most popular edition contains twenty-four for the former and twelve for the latter, both being divided into eighty-one chapters. The setting of the book is quite original. It is in the form of a catechism—a series of conversations between Huang Ti and his ministers. Its contents cover a variety of subjects such as the theory of disease, the influence of the constellations on the human organism, the transmission of the elemental vapours, humoural pathology, pulse indications, anatomical speculations, health conservation, principles of treatment, acupuncture and the like. Some idea of the medical lore of this work may be gathered from the following list of its contents together with some extracts.

CONTENTS OF THE SU WEN

Book 1

- | | | |
|---------|--------------|-------------------------------------|
| Chapter | 1 (上古天真論) | The Simple Life in Primitive Times. |
| " | 2 (四氣調神大論) | Hygiene of the Four Seasons. |
| " | 3 (生氣通天論) | Vital Air from the Sky. |
| " | 4 (金匱真言論) | True Words of the Golden Chamber. |

Book 2

- | | | |
|---------|--------------|---------------------------------|
| Chapter | 5 (陰陽應象大論) | Manifestations of the Yin Yang. |
|---------|--------------|---------------------------------|

- „ 6 (陰陽離合論) Union and Separation of the Yin Yang.
 „ 7 (陰陽別論) Other Discourses on the Yin Yang.
Book 3
 Chapter 8 (靈蘭秘典論) Functions of the Five Viscera.
 „ 9 (六節藏象論) Numerical Categories of the Five Viscera.
 „ 10 (五藏生成論) Growth of the Five Viscera.
 „ 11 (五藏別論) Other Discourses on the Five Viscera.
Book 4
 Chapter 12 (異法方宜論) Nosology of Diseases.
 „ 13 (移精變氣論) Psychotherapeutics.
 „ 14 (湯液醪醴論) Concoctions and Tinctures.
 „ 15 (玉板論要論) Diagnosis by Observation.
 „ 16 (診要經終論) On Blood-letting.
Book 5
 Chapter 17 (脈要精微論) Principles of the Pulse.
 „ 18 (平人氣象論) Respiration and the Pulse.
Book 6
 Chapter 19 (玉機真藏論) Varieties of the Pulse.
 „ 20 (三部九候論) Three Divisions and Nine Spaces.
Book 7
 Chapter 21 (經脈別論) On the Blood Vessels.
 „ 22 (藏氣法時論) Principles of Treatment.
 „ 23 (宣明五氣論) The Significance of Numbers.
 „ 24 (血氣形志論) Expressions of the Vital Spirits.
Book 8
 Chapter 25 (寶命全形論) The Precious Life.
 „ 26 (八正神明論) On Diagnosis.
 „ 27 (離合真邪論) On Acupuncture.
 „ 28 (通評虛實論) Weak and Strong Constitution.
 „ 29 (太陰陽明論) The Spleen and Stomach.
 „ 30 (陽明脈解) On Delirium.
Book 9
 Chapter 31 (熱論) On Fevers.
 „ 32 (刺熱論) Treatment of Fevers by Puncturing.
 „ 33 (評熱病論) Review of Fevers.
 „ 34 (逆調論) Etiology of Fevers.
Book 10
 Chapter 35 (瘧論) On Malaria.
 „ 36 (刺瘧論) Treatment of Malaria by Puncturing.
 „ 37 (氣厥論) On Suffocation.
 „ 38 (欬論) On Cough.
Book 11
 Chapter 39 (舉痛論) The Significance of Pain.
 „ 40 (腹中論) Abdominal Complaints.
 „ 41 (刺腰痛論) Kidney Pains and Puncturing.

Book 12

- Chapter 42 (風 論) Wind Diseases.
 " 43 (痺 論) On Numbness.
 " 44 (痿 論) On Paralysis.
 " 45 (厥 論) On Syncope.

Book 13

- Chapter 46 (病 能 論) Disease Symptoms.
 " 47 (奇 病 論) Diseases of the Blood Vessels.
 " 48 (大 奇 論) Pulse Indications.
 " 49 (脈 解 論) Explanations of the Pulse.

Book 14

- Chapter 50 (刺 要 論) Principles of Acupuncture.
 " 51 (刺 齊 論) Explanation of the Above.
 " 52 (刺 禁 論) Contra Indications for Acupuncture.
 " 53 (刺 志 論) Acupuncture and Constitution.
 " 54 (針 解) Uses of the Nine Needles.
 " 55 (長 刺 節 論) Depth of Punctures.

Book 15

- Chapter 56 (皮 部 論) Premonitory Symptoms.
 " 57 (經 絡 論) The Muscular System.
 " 58 (氣 穴 論) Vital Points for Puncturing.
 " 59 (氣 府 論) Vital Reservoirs.

Book 16

- Chapter 60 (骨 穴 論) On the Joints.
 " 61 (水 熱 穴 論) Hot Vital Points.

Book 17

- Chapter 62 (調 經 論) Treatment of Vascular Diseases.

Book 18

- Chapter 63 (繆 刺 論) Blood Letting.
 " 64 (四 時 刺 逆 從 論) Blood Letting and the Seasons.
 " 65 (標 本 病 傳 論) Symptoms and Causes.

Book 19

- Chapter 66 (天 元 紀 大 論) Astrology and Medicine.
 " 67 (五 運 行 大 論) Revolutions of the Five Elements.
 " 68 (六 微 旨 大 論) Medical Astrology.

Book 20

- Chapter 69 (氣 交 變 論 大) Atmospheric Changes.
 " 70 (五 常 政 大 論) The Five Important Combinations.

Book 21

- Chapter 71 (六 元 正 紀 大 論) Astrological Influences.
 " 72 (刺 法 論) Principles of Puncturing.
 " 73 (本 病 論) Organic Diseases.

Book 22

Chapter 74 (至真要大論) Etiology of Diseases.

Book 23

Chapter 75 (著至教論) Miscellaneous Complaints.

„ 76 (示從容論) Cause and Treatment.

„ 77 (疏五過論) Diagnosis.

„ 78 (微四失論) Further Discussion on Diagnosis.

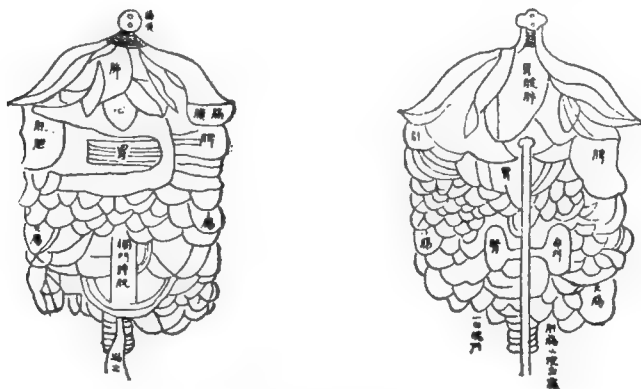
Book 24

Chapter 79 (陰陽類論) Discourse on the Yin Yang.

„ 80 (方盛衰論) Theory of Dreams.

„ 81 (解精微論) Physiology of the Emotions.

Anatomy. The internal organs are divided into two kinds—the five “tsangs” (五臟) and the six “fus” (六腑). The five “tsangs” are the heart, liver, spleen, lungs, and kidneys, the six “fus” are the gall-bladder, stomach, large intestine, small intestine, bladder, and the “san chiao” (71). A distinction is made of the functions of these two sets of organs. A “tsang” is supposed to be solid, storing up but not eliminating; while a “fu” is said to be hollow, eliminating but not storing.



Internal Organs
(Anterior Aspect). (Posterior Aspect).

From the *Ch'uang Yang Ching Yen*, a treatise on Surgery published in the 56th year of Kang Hsi (1717 A.D.)

The original was supposed to be written by Premier Tou Han-ching of the Sung dynasty.

(71) San Chia 三角 or “Three burning spaces” are imaginary organs upon which no two authorities are agreed as to their location and function.

Dissection of the human body appears to have been attempted for Ch'i Pai made the statement that: "The height of the heavens, the extent of the earth cannot be ascertained by man. But the eight feet of the human body may be measured on the surface and after death it may be dissected and observations made as to the size of the organs, the capacity of the intestines, the length of the arteries, the condition of the blood, and the amount of pneuma." Some measurements of the alimentary tract are given which may be of interest to anthropologists. Distance from lip to teeth $9/10$ inch; width of mouth $2\frac{1}{2}$ inches; distance from teeth to epiglottis $3\frac{1}{2}$ inches; capacity of mouth and pharynx 5 ho (72); weight of tongue 10 oz., length 7 inches, width $2\frac{1}{2}$ inches; weight of oesophagus 10 oz., width $1\frac{1}{2}$ inches, length 1 foot 6 inches; length of stomach, stretched 2 feet 6 inches, circumference 1 foot 5 inches, capacity 3 tous 5 shengs (73); circumference of small intestine $2\frac{1}{2}$ inches, diameter $8/10$ inch, length 33 feet, capacity 2 tous 5 shengs; circumference of large intestine 4 inches, diameter $1\frac{1}{2}$ inches, length 20 feet, capacity 1 tou; circumference of rectum 8 inches, diameter $2\frac{1}{2}$ inches, length 2 feet 8 inches, capacity $2\frac{1}{2}$ ho (74).

The small intestine is attached to the sphine behind and to the navel in front. It has sixteen convolutions. The large intestine lies on the left side of the navel and has also sixteen convolutions. The total length of the alimentary tract is sixty-four feet and four-tenth inches. (It appears that the ancient Chinese anatomists took an intense interest in determining physical standards for, in addition to the above, measurements of the bones, arteries, etc. are also recorded).

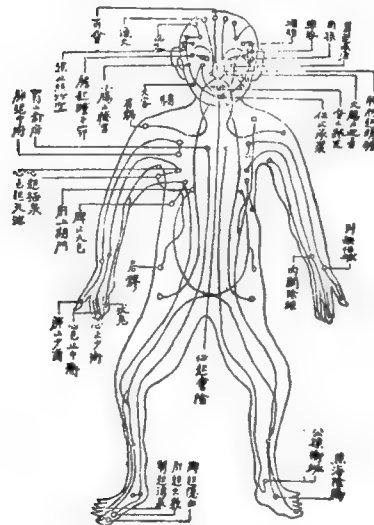
The vascular system consists of twelve pairs of main vessels called "Ching mo" (經脈) and their respective branches. They carry the blood and air to different parts of the body. Minute descriptions of these are given showing where they begin and where they end. The terms "chin" (經) "lo" (絡) and "sun" (孫) are employed to designate the type of vessels. Broadly speaking they correspond to the arteries, veins and capillaries. But this distinction is not very often clearly made. Along the course of these vessels are 365 "ch'i hsüeh" (穴氣) or vital points for acupuncture. These have fanciful names and puncturing should be made at these points to evacuate the pulse air. There are likewise twelve pairs of ligaments following the same course as the blood vessels.

(72) Ho 合 is one-tenth of a pint.

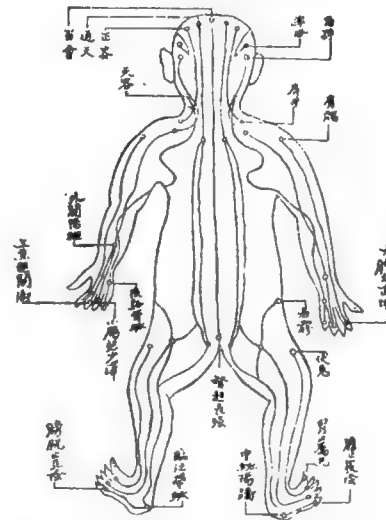
(73) Tou 斗 is one peck, sheng 升 is one pint.

(74) The above are ancient Chinese measures which are different from those of the present day. Unfortunately the standard has been lost so that we cannot ascertain the value of these units.

圖全止起經諸人仰



圖全止起經諸人俯



Pictures showing the course of the blood vessels
(Anterior Aspect). (Posterior Aspect).

(From the *I Tsung Chin Chien* or *Golden Mirror of Medicine*). Compiled by a staff of physicians at the order of Emperor Kang Hsi in 1749 A. D.

Physiology. Like anatomy, the physiology of the *Nei Ching* was mostly a product of imagination. The functions of the different organs are described thus: The heart is the prince of the body, the seat of the vital spirit. The lungs are the ministers who regulate one's actions. The liver is the general, the abode of stratagem. The gall-bladder is the central office, courage dwells in it. The pericardium is the ambassador who brings joy and happiness. The spleen and stomach are the granaries, the five tastes emanate from them. The large intestine is the organ of communication where matter undergoes changes. The small intestine is the receiving organ, the place of digestion. Skill proceeds from the kidney, the seat of vigour and strength. The *san chiao* constitutes the sewage system which drains off fluids. The bladder is a reservoir storing up the secretions which pass out after having been interacted upon by vapour.

Knowledge concerning the nervous system is practically nil. Although it is known that the brain is contained in the skull it is considered to be of substance similar to bone marrow. It is stated that the brain is a reservoir of marrow. When it is in abundance the body feels light and strong. When it is deficient there is dizziness, ringing in the ears, aching pains in the limbs, blurred vision and a tired feeling.

It is claimed that Harvey's epoch-making discovery had been anticipated in China by about two thousand years. This assumption is based on rather scanty evidence. Nevertheless, it must be admitted that the ancients made a very near guess at the facts, for the following passages from the *Nei Ching* concerning the circulation of the blood are very significant:

"All the blood is under the control of the heart."

"The heart regulates all the blood of the body."

"The twelve blood vessels are deeply hidden between the muscles and cannot be seen. Only those on the outer ankle are visible because there is nothing to cover them in these places. All other blood vessels that are on the surface of the body are 'lo' vessels."

"The harmful effect of wind and rain enters the system first through the skin. It is then conveyed to the 'sun' vessels. When these are full it goes to the 'lo' vessels and these in turn empty into the big 'chin' vessels."

"The blood current flows continuously in a circle and never stops."

"The blood cannot but flow continuously like the current of a river, or the sun and moon in their orbits. It may be compared to a circle without beginning or end."

"The blood travels a distance of three inches during inhalation and another three inches during exhalation, making six inches with one respiration."

It will be seen from the above that the ancient Chinese had indeed grasped part of the truth concerning the circulation of the blood. But beyond this no further investigations had been made. The systemic and pulmonary circulations were not understood. According to one passage the blood stream is said to start from the foot and to circulate to the kidneys, the heart, the lungs, the liver, the spleen, in the order named, and from the spleen back to the kidneys, thus making a complete circuit. No proper distinction was made between arteries and veins. The terms 'chin' and 'lo' were used in an indiscriminate manner, showing the lack of definite knowledge of these vessels. That the blood travels six inches during one respiration points to an attempt at experimental physiology, though the results are incorrect when compared with the findings of modern science.

Other ideas on anatomy and physiology are found scattered among the pages of the *Nei Ching*. E. T. Hsieh has given a good review of position, some of the conclusions being as follows (75):—

The liver has a rancid odour, a sour taste, a brown colour, and is the seat of anger. The heart has an odour of toast, a bitter taste, a brownish-red colour, and is the seat of happiness. The spleen has a fragrant odour, a sweet taste, a yellow colour, and is the seat of

(75) E. T. Hsieh: *A Review of Ancient Chinese Anatomy*, Anatomical Record 20, pp. 97-127.

thought. The lung has a fishy smell, a hot taste, a white colour, and is the seat of sorrow. The kidney has a putrid smell, a salty taste, a black colour, and is the seat of fear.

The liver produces the ligaments, forms the heart, and controls the lungs. The heart produces the blood, forms the spleen, and controls the kidneys. The spleen produces the flesh, forms the lungs, and controls the liver. The lungs produce the skin and hair, form the kidneys, and control the heart. The kidneys produce the bone-marrow, form the liver, and control the spleen.

The five organs control the five senses and all parts of the body. The liver has the eye for its opening, converts the fluid into tears, supplies the ligaments, and nourishes the nails. The heart has the tongue for its opening, converts the fluid into perspiration, supplies the pulse, and nourishes the complexion. The spleen has the mouth as its opening, converts the fluid into saliva, supplies the flesh, and nourishes the lips. The lungs have the nose as their opening, convert the fluids into nasal secretion, supply the skin, and nourish the fine hairs. The kidneys have the ear and the genito-urinary meatus for openings, they convert the fluids into spittle, supply the bone, and nourish the coarse hairs.

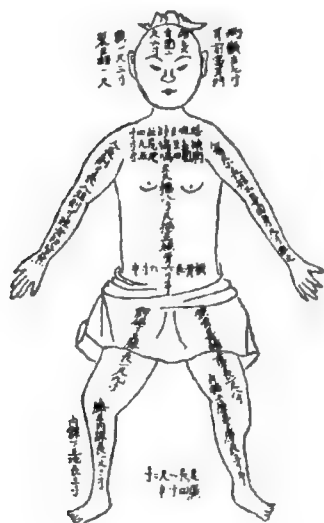
The five organs are related to the six viscera, there being a mutual reciprocity in their actions. The lungs relate to the large intestines, which answer to the skin; the heart relates to the small intestines, which answer to the arteries; the liver relates to the gall-bladder, which answers to the ligaments; the spleen relates to the stomach, which answers to the muscles; the kidneys relate to the three "burning spaces" and bladder, and answer to the skin and the hairs.

The surrounding walls of the organs and viscera are also described: The thorax and abdomen constitute the city wall, the pericardium the palace of the king. The stomach is the granary and the throat and small intestines the post office. The five openings of the stomach are called the doors, entrances and outlets for the granary. Water and grain enter the oesophagus, and air by the trachea. The food enters the stomach where essence soaks into it and it becomes gas, which, if of nourishing quality, passes into the lower burning space. The mouth and lips are the fan for the voice, the tongue the machine, and the uvula the pass. The larynx divides the air. The breath coming from the lungs is supposed to act on the hyoid bone and the tongue in speaking.

From the foregoing account it will be observed that anatomy in China was, in the beginning, based upon actual observations as evidenced by the fairly accurate descriptions of the internal organs. Unfortunately, this direct method was soon dominated by a system of philosophy which resulted in speculations and mere guesswork.

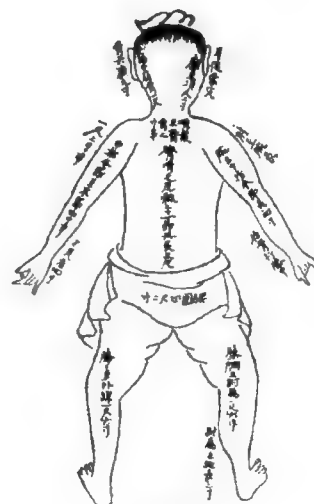
Many peculiar assumptions were thus made; some of the main organs being left out while hypothetical ones were inferred. Lockhart, on viewing some anatomical diagrams, summed up the matter as follows: "These are just as if some person had seen some imperfect dissection of the interior of the body and then sketched from memory a representation of the organs, filling up parts that were obscure out of his own imagination, and portraying what, according to his own opinion ought to be, rather than what they in reality are!"

圖寸尺面正度骨



(Anterior).

圖寸尺面反度骨



(Posterior).

Pictures showing measurements of bones

(From the I Tsung Chin Chien).

Pathology. Diseases are commonly divided into two groups, those arising from external influences such as wind, cold, dryness, moisture, etc. and those from internal emotions such as joy, grief, anger, fear, etc. Other classifications are according to the region or organ affected. Wind, however, is regarded as the chief predisposing cause. Its harmful effects are manifested in divers ways. When it enters the system it produces symptoms peculiar to each organ. For example, if the wind is in the lungs, there are chills, perspiration, incessant cough, pale complexion, shortness of breath, better in daytime but worse at night. If it is in the heart, chills, perspiration, parched lips, irritable temper, difficulty in speech. If it is in the kidney,

perspiration, chills, swollen face, backache, inability to stand straight, and so forth.

Particular significance is attached to the atmospheric changes of the four seasons. Haemorrhages are supposed to be prevalent in spring, diarrhoeas in summer, agues and fevers in autumn, paralysis and fits in winter. Attention should also be directed to the exciting cause of the season so as to avoid its after effects. It is believed that when one catches cold in winter, typhoid will appear in the following spring; when injured by too much wind in spring, bowel trouble will happen in summer; when exposed to intense heat in summer, fevers and chills will result in autumn; and when attacked with dampness in autumn, bronchial complaints will appear in winter. The vital spirit should harmonize with the seasons, the five elements, the Yin Yang principles and various other factors. Sickness will arise, if these forces are deranged.

Medicine. The disease symptoms described are so brief and vague that it is often impossible to tell what they indicate. But malaria, diabetes, nephritis, gastric ulcer, bronchitis are well defined, leaving no doubt as to their exact nature.

Throughout the *Nei Ching* very little is mentioned about therapeutic measures excepting acupuncture which was the accepted method of treatment. Indeed, the *Ling Shu* is more or less a special treatise on this art. Most of the contents are devoted to its technique, indications, prognosis and results. Other forms of treatment described are venesection, cauterisation, decoctions and massage. But only the general principles are laid down, no specific directions being given. In diagnosis and prognosis all manner of sophisticated subtleties are dealt with. The physical temperament, general condition, state of mind, influence of the atmosphere, time of year or day, constellation, locality, colour of skin and other objective signs are taken into consideration. But the most important of all is the pulse which is believed to be able to indicate the nature and location of every kind of disease. This procedure is so highly esteemed and so much attention and study has been given to it that a complete system has evolved out of this branch of medicine. A more detailed account of this will be given in another part of this volume.

The above is a brief summary of this great medical classic. The book, in its present form, owes its origin to Wang Ping (王冰) of the T'ang dynasty. The favourite theme of medical writers is to annotate or to commentate on this work. In every dynasty at least half a dozen such treatises made their appearance. Up to the end of the Ch'ing dynasty the total reached forty-nine, of which twenty-three have been lost and three are unknown.

CHAPTER VII

MEDICAL CONDITIONS DURING THE CHOU DYNASTY

Chinese medicine attained a high degree of development during the Chou dynasty especially in the matter of medical organization, hygiene and public health. The *Chou Rituals* (76) distinguished four kinds of doctors, namely, physicians, surgeons, dietitians and veterinary surgeons. Their duties were well defined. The physicians treated internal complaints only, i.e. medical cases; the surgeons attended to external diseases such as wounds, fractures, ulcers, etc., the dietitians looked after food and drink; and the veterinary surgeons took care of the illness of animals:

"The chief doctor superintends all matters relating to medicine and collects drugs for medical purposes. He directs the doctors to take charge of the different departments so that those who are sick or wounded may go to see them. At the end of the year their work is examined and the salary of each fixed according to the results shown. If all cases get well, it is excellent; if there is one failure in ten cases, it is second; if two out of ten, third; three out of ten, fourth; and if four out of ten, it is bad. When any death occurs the doctor in charge has to record the cause of death and submit the report to the superintendent.

Dietitians mix the six foods and drinks, the six meals, the hundred sauces and the eight delicacies, to get the right taste and consistency. Rice should be taken warm, soups hot, sauces cool, and drinks cold. In the selection of flavours sour is good in spring, bitter in summer, pungent in autumn, and salt in winter. Sugar and flour should be added to improve the taste.

Physicians attend to the sicknesses of the people. There are particular diseases in the four seasons of the year. Headaches and neuralgic affections are prevalent in spring, skin troubles in summer, fevers and agues in autumn, and bronchial and pulmonary complaints in winter.

The five tastes, five grains, and five drugs are employed for curing diseases while the five airs, five sounds, and the five colours are

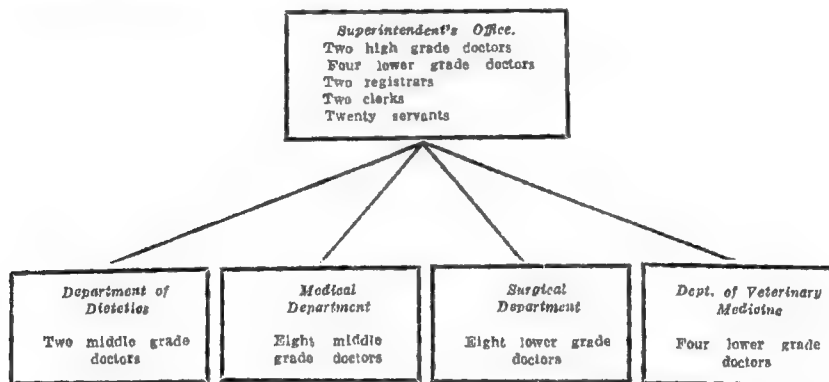
(76) 周禮天官 *Chou Li T'ien Kuan*.

examined for predicting the results. Any changes in the nine apertures or movements in the nine viscera are also noted with care. The patients are assigned to the different departments to be treated and the results recorded shall be submitted to the superintendent.

Surgeons look after cases of swellings, ulcers, wounds and fractures, treating them with plasters, scraping, or cauterisation. For an ulcer the five poisons may be utilized to attack it, the five airs to nourish it, the five drugs to cure it, and the five tastes to modify it. Sour substance nourishes the bones, pungent substance the tendons, salty substance the blood, bitter substance the respiration, sweet substance the muscles, glutinous substance the openings. All those with ulcers should be thus treated.

Veterinary surgeons treat the ailments and wounds of animals. When any deaths happen the number should be recorded so that they may be replaced."

The medical department was well organized. In the superintendent's office were two high grade and four lower grade doctors, two registrars, two clerks and twenty servants. In the department of dietetics were two middle grade doctors; in the medical department eight middle grade doctors. There were eight lower grade doctors in the surgical department, and four lower grade doctors in the department of veterinary medicine. The following diagram will illustrate matters more clearly.



As in other countries surgeons were classified on an inferior plane to physicians. Only lower grade doctors were put in charge of the surgical department. It is significant to note the high position given to the department of dietetics which, in the order of priority, even preceded that of medicine.

Although the function of the priest and the physician was separated at this period yet the general distrust of the latter's ability

and character was undeniable. The *Analects* says that without perseverance one cannot even become a priest-doctor. The *Record of Rites* warned one not to take any medicine compounded by a doctor who was not backed up by the experience of three generations. Huai Nan-tzu believed that doctors could not cure their own complaints. Confucius' attitude towards medicine was also one of suspicion. Once when his disciple sent him a present of physic, he bowed and received it saying: "I do not know it. I dare not taste it" (77). It was the custom for a minister to taste the decoction before serving it to the king or for a son to taste the decoction before serving it to his parents (78). The reason for the former action was obvious; for the latter it was considered a mark of filial piety.

Opinions varied regarding the value of drugs. The *Family Sayings of Confucius* says that though the medicine be bitter to the taste it is good for the disease (79). The *Shu Ching* remarks that if a medicine does not raise a commotion in the patient the disease will not be cured by it (80). Kuan Tzu observes that it is wrong to prohibit all doctoring simply because some one has died from taking drugs. On the other hand, Chuang Tzu asserts that medicinal draughts will add to the severity of the disease. Mei Tzu states that one can remove the trouble only when one knows the cause. In the opinion of Wen Chung-tzu, the able doctor first attends to sleep and diet before resorting to drugs while the *Shen Chien* exhorts one not to take any medicine if there is nothing wrong for it is only useful for curing disease.

That prevention is better than cure appears to be apprehended by the ancients. The following quotations from various writers are worth recording (81):

The sage does not treat those who are ill but those who are well. *Su Wen.*

The good doctor pays constant attention to keeping people well so that there will be no sickness. *Huai Nan-tzu.*

The skilful doctor treats those who are well but the inferior doctor treats those who are ill. *Difficult Classics.*

The good physician first cures the disease of the nation, then human ailments. *Ancient History.*

Hygiene and public health were also in an advanced state during the Chou dynasty. The writings of Confucius, Huai Nan-tzu, Chuang

(77) 論語 *Lun Yü* or *Analects*.

(78) 禮記 *Li Chi* or *Record of Rites*.

(79) 孔子家語 *K'ung Tzu Chia Yü*, or *Family Sayings of Confucius*.

(80) 書經 *Shu Ching* or *Book of Records*.

(81) For a full list of these quotations see K. C. Wong's *Chinese Medical Sayings and Proverbs*. *China Med. Journ.*, Dec. 1925.

Tzu, Chou Kung and others contain numerous references to these subjects. Thus, as regards food and drink, Confucius advised one to abstain from rice which had been injured by heat, dampness and had turned sour; fish and meat that were not fresh; what was discoloured; what was of bad flavour; anything that was not in season, etc. (82). The relation between contaminated food and disease was recognized. The *Analepts* says: "Diseases enter by the mouth." "Eat nothing that was improperly cooked." "Meat and wine bought from the street stands must not be taken." Temperance in the broad sense of the word was advocated. According to an ancient saying wine is a poison coursing through the heart and confuses the intellect. There were national prohibition laws, any one found with apparatus for the brewing and distilling of wine being promptly prosecuted. Moderation and regularity in eating and drinking were emphasized. Confucius says: "If a man is irregular in his sleep, intemperate in his eating, and immoderate in his work, sickness will kill him." Kuan Chung pointed out that regularity in habits and moderation in food gave health and longevity. "All men unite in despising a glutton", remarked Mencius, "because he gives up everything that is valuable for the sake of pampering what is so contemptible." The *Analepts* also say: "The superior man does not in his food seek to gratify his appetite, nor in his dwelling place does he seek the appliance of ease." Rich foods were condemned. The *Kuo Yu* even went so far as to say that they were poisonous. According to Huai Nan-tzu strong flavours injured the taste and destroyed the appetite. Though a strict vegetarian diet was not prescribed meat was not recommended. The *Tso Ch'uan* said that flesh eaters were stupid and had no foresight. A rule of Confucius was not to allow meat to exceed the due proportion for the rice. Physical culture and sports were practised. Of the six arts mentioned in the *Chou Li* archery and charioteering were among the number; the others being ceremonial observances, music, writing and mathematics. The beneficial effects of deep breathing were known. Huai Nan-tzu said that it cleared the intellect and prolonged life. The philosopher Chuang Tzu stated that by exhalation and inhalation the foul air was expelled and fresh air taken in thus producing longevity. Conservation of energy was much extolled. Two maxims from Chuang Tzu were: "Do not fatigue your body nor exhaust your energy and you will live long." "Contentment and peace shut out all worries giving no chance for evil to sneak into the system." Kuan Tzu taught that worry and anxiety caused sickness. Huai Nan-tzu added that if the mind was peaceful every joint will feel good. The *Nei Ching*

(82) The *Analepts* and specially the chapter Hsiang Tang contain a vivid description of the private life of Confucius as regards eating, clothing, etc.

states a physiological fact when it says that grief hinders the breathing and joy quickens the circulation. A famous saying of Mencius is that to nourish the heart there is nothing better than to make the desires few. Virtue was regarded as the secret of health. In the words of Confucius the virtuous lived long. The *Shu Ching* enumerated the five blessings as follows:—long life, wealth, peace, love of virtue and a good end.

The ill effects of excessive sensual pleasure were well known. According to P'eng K'êng, the Chinese Methuselah, sleeping alone was better than any medicine. "A gentleman," he remarked, "sleeps in a separate bed from his wife, a mediocre man sleeps under different covers" (83). Confucius saying that one should not sleep on one's back is based on sound observation. Early marriage was discountenanced. The *Analects* prescribed thirty years for the man and twenty years for the girl as the most suitable age for marriage. The *Chü Li* also says that one should marry at thirty because this is the prime of life (84). The harm of blood marriages was known. Hence persons of the same surname were not allowed to intermarry. Many very sensible rules for prenatal care were also laid down. To quote from the *Biographies of Famous Women*: In ancient times a pregnant woman did not lie on the side in sleeping, bend her back on sitting, or stoop on standing. No strange food was permitted to enter her mouth; no terrible sights were put before her eyes, and no vulgar sounds were allowed to reach her ears, etc. (85). From experience they learned the law of eugenics though its true meaning was not properly understood. The important role of heredity in race culture seemed to have been conjectured (86). A characteristic feature of Chinese thought was the intense desire for children. It was closely related to the ancient idea of ancestor worship. As Mencius taught that there were three things which were unfilial, and to have no posterity was the greatest of them, it is not to be wondered that sterility was so dreaded. For obvious reasons the preference for boys was well-nigh universal. Because he had no son but five daughters, the famous physician Ts'ang Kung lamented his unfortunate fate.

Hospitals were mentioned. Kuan Tzu says: "In the Capital there are institutions where the deaf, the blind, the dumb, the lame, the paralytic, the deformed, and the insane are received. When ill

(83) 彭鏗 P'eng K'êng, a mythical being who is reputed to have attained a fabulous longevity.

(84) 曲禮 *Ch'ü Li*.

(85) 列女傳 *Lieh Nü Chuan*.

(86) Many references to this are found in the writings of a later dynasty. Shih Pai 史伯 said that intermarriage of blood relations affected the offspring. Chu Chan 叔詹 also pointed out that when husband and wife were of the same surname the children were not numerous.

they are cared for until they have recovered." Many references of this nature are found in the literature of subsequent dynasties. These institutions were centres of benevolence, where the destitute went for food and shelter and the sick for medicine and care. From the meagre records available we have no means of ascertaining how they were equipped and managed. It may be presumed that the standard was very low, and perhaps they scarcely merit the name of hospital if judged according to the modern sense of the word. During the T'ang dynasty they were chiefly in the hands of the ecclesiastical authorities but in other periods they were conducted by the government or by the municipality.

The same writer is also credited with the measure of segregation of prostitutes. It is recorded that he established 300 *lu* (局) for the convenience of merchants. A *lu* is a place corresponding to the modern red-light district, to which prostitutes confine themselves in carrying on their trade. In the reign of Han Wu (about 40 B.C.) prostitutes were supplied to the camps for soldiers, and in the T'ang and Sung dynasties brothels were licensed and given the name of "chiao fang" 教坊.

Three typical ancient Chinese methods of treatment are acupuncture, moxa and massage. Acupuncture is said to have been invented by Huang Ti. The *Nei Ching* contains numerous references to it. Pien Ch'iao, the celebrated physician, was skilled in its application. In the T'ang dynasty it formed one of the seven branches of medicine, a special chair being established with a "professor" in charge of it. But it was under the Sung that it may be said to have become a science and the first monograph was published. In 1027 A.D. the reigning Emperor caused two copper models of the human body made with markings to illustrate the principles of acupuncture and points for puncturing. There are 365 points, each having its own name and supposed relationship with the internal organs.

The operation consists of puncturing certain points of the body with needles of varying size and length. Nine kinds of needles are distinguished, namely: arrow-headed, blunt, puncturing, spear-pointed, ensiform, round, capillary, long and great. They are made of steel, copper or silver and, in ancient times, of flint. The needles are inserted into the flesh, more or less deeply, or may be driven in by a blow with a light mallet. They may be used hot or cold, and occasionally are left *in situ* for days. During the process the patient is usually ordered to cough. The point of insertion, the direction of their rotation, the number of needles, the depth of the puncture, and the length of time they are left in, all depend upon the nature and severity of the individual case. Acupuncture is widely practised and is considered a universal panacea. It is chiefly used in cholera, colic,

cough, rheumatism, sprains, swollen joints, and deep seated pains of all kinds.

Acupuncture was carried from China to Japan at an early period. Its introduction into Europe was through the efforts of a Dutch surgeon named Ten-Rhyne, who wrote an article which appeared in London in 1683 A.D. Kaempfer in 1712 A.D. in the third fascicule of *Amoenitates Exoticae* has a paper on the subject. At one time it excited considerable interest in the West, especially in France. Remusat published a long analysis of the works written at the beginning of the last century for and against this practice. Recently Sir James Cantlie (87) tried it successfully in several cases of rheumatism and Fereyrolles and Morant contributed a review on its history and application.

Moxa, or moxibution, as it is sometimes called, is another method peculiarly Chinese having a very ancient origin. It consists of combustible cones of artemisia moxa or common mugwort which are applied on the skin at certain spots and ignited. These cones are placed in a sort of geometrical figure, the frequent sites being the epigastric region, the upper part of the sternum, and the front of the ear. As the smouldering fire burns into the skin a blister is raised. Its effect is similar to counter-irritation or cauterisation but more painful. Very often the resulting wound becomes infected and the remedy is then worse than the disease. The *Ling Shu* says that where acupuncture is not suitable moxa may be employed. Wang Tao of the T'ang dynasty discarded acupuncture in favour of moxa on the ground that the former was a lost art and often attended with risks. According to Thomson, early Portuguese navigators carried it to the West where it was, at one time, exalted to the electro-moxa stage.

The Japanese are wonderfully clever at massage. They learned this from China where it has been practised from time immemorial. Mencius and Pien Ch'iao both mentioned it in their works. The *Annals of Art* also mentions a treatise on it in 10 volumes entitled *Huang Ti Ch'i Pai An Mo* (黄帝岐伯按摩). The operation generally consists of tapping, kneading, pinching, chafing, and pommelling the body all over, producing the most delightful sensations and relief from tiredness. Massage is used in various conditions but chiefly in muscular fatigue, rheumatism, nervousness, insomnia, headache, paralysis, lumbago, etc. Its value was fully recognised and in the T'ang dynasty it was elevated to the rank of a science to form one of the seven branches of medicine. After the Sungs it degenerated and at the present time it is mostly in the hands of the barbers and the blind. Massage was first brought to European notice in the

(87) J. Cantlie; Needling painful spots as practised by the Chinese. *China Med. Journ.*, Vol. 20.

eighteenth century through the publications of the Jesuit fathers. It is widely practised in its various phases as by electro-massage rubbers, steam manipulators, etc.

The construction and development of Chinese characters form an important as well as an interesting branch of study. A knowledge of their ancient forms throws a not inconsiderable light on the medical thoughts and conditions of the time. In a previous chapter we have given an illustration of the character 'I' (醫) doctor, showing how it was first written, the meaning of its component parts, and its subsequent changes. Here we propose to cite a few more examples so that a clearer conception of this aspect may be obtained. Dr. Ingram has contributed a very good article on this subject entitled "Seal Characters with Special Reference to Anatomical Terms," a summary of which may be quoted as follows:

The character for sickness (病), *ping*, it composed of the symbol for a bed (疒), and at the top is a horizontal line indicating the position of a sick person. Inside of this character is the character for ping (丙), the third character in the ten stems. This character is supposed to indicate fire. In the seal writing it is a house with the flames bursting through the roof (火). Therefore this is not a bad combination for disease—a bed, a person in the recumbent position, and fire, which is used to represent the feverish condition. The small dot at the top of the character was arbitrarily added by the scribes.

The word for dysentery is *li* (痢). It is an old character and shows that the disease has been prevalent for five thousand years. This also is composed of the radical for disease (疒), and inside is a symbol which indicates the cutting of grain with a reaping hook, *li* (利). The original meaning of this phonetic was to cut or to reap with a hook, an operation which did violence to the standing grain; and, as dysentery is very painful and destructive, this phonetic was adopted. Dysentery is spoken of generally as *li chi* (痢疾). The second character also has the radical for disease, and the symbol of an arrow beneath it, (矢). A *chi* disease was one that came suddenly, like an arrow wound. It also means a serious ailment. The two terms, *li chi* (痢疾), together describe the disease very properly.

The character for medicine (藥), *yao*, originates in the character for music (樂). The Chinese have only five tones in their scale, and the character for music is composed of five bells which are attuned and give the five notes. The central bell is the largest and on either side are two smaller bells. These five are supported on a rack, and the lower part is the pedestal. Medicine is the vegetable, *ts'ao* (艸), which is able to attune the body, bringing it back to normal.

We will next take up the character for malaria (瘧), *chang*. Here again we have the radical for disease (疒). Inside we have the

character for chapter, *chang* (章). *Chang* (章) was composed of *yin* (音), and *shih* (十), ten. Ten strains, according to the Chinese idea, formed a complete musical composition. This character was originally used for a composition or piece of music. It afterward was used for a chapter of any kind of writing. As malaria seemed to run a uniform course, chill, fever, sweat, and recovery, therefore they considered it as coming in chapters (章).

The term for smallpox, *tou* (痘), indicates that this disease also has been prevalent for thousands of years. It also has the radical for disease, and beneath it is an old writing for a dish, the *tou* (豆). The most archaic writing is a dish with something in it, and this writing is very suggestive of the umbilicated pustules of smallpox, the most characteristic feature of the disease.

The character for child (兒), *er*, indicates a child whose fontanels are not yet closed. Originally, I think this was used for either male or female children, but latterly it is largely confined to the former. The seal writing (兒), depicts the fontanel still open.

The term *tien* (癲) is used for an unbalanced condition of the mind. In the seal writing (真), *chen*, on the left side means true, and on the right side is a representation of the head (頁), the explanation being that the true nature of the individual has escaped through the fontanels, and thus he is deranged.

The character for pain, *t'eng*, is (疼). In the archaic writing it is composed of *chung* (𠂔), a skein of thread properly twisted and tied up for sale. It is a finished product. The symbol for winter is this same character, with the addition of the symbol for ice (冫). It was the end of the year, when the rivers were held in the grasp of ice, (冫) winter. Pain was winter plus the radical *ni* (疒), described above. What can be more painful than the biting of frost? This was the symbol adopted for pain.

The term for delirium (狂), *k'uang*, indicates that hydrophobia has been known to the Chinese from the very commencement of the written language. This character is composed of the radical for dog (犬), plus a symbol which indicates tufts of grass growing promiscuously in the field (𦰇), *wang*. This phonetic is used with characters where the idea of rambling without any definite object is set forth. Thus the old meaning of the character *k'uang* (狂), was a rabid dog, but it is now used for expressing any kind of delirium.

CHAPTER VIII

THE GREAT TRIO: TS'ANG, CHANG AND HUA

Chinese medicine begins properly in the Han dynasty and its scientific advancement centres in the figures of Ts'ang Kung (倉公), Chang Chung-ching (張仲景) and Hua T'o (華佗), three of the greatest medical men in history. Ts'ang Kung, whose real name was Ch'un-yü I (淳于意), was the first to record personal observations of clinical cases. He was one time magistrate of Tai Ts'ang and as a mark of respect people styled him Ts'ang Kung, meaning Father Ts'ang, which name has clung to him ever since. A native of Lin Tzu, it is said that he was devoted to the art of medicine even when young, and in 180 B.C. he studied under Kung-ch'eng Yang-ch'ing (公乘陽慶), an old doctor of about seventy years of age. In the 4th year of Wen Ti about 176 B.C. he was charged with some criminal offence and ordered to proceed west to Chang An to receive his punishment. Ts'ang Kung had no son but five daughters, who surrounded him and wept. In a fit of anger he remarked that it was a great misfortune to have had no son to help him in times like these. The youngest daughter took this to heart and followed her father to the capital. She submitted a petition to the Emperor begging that she be condemned as a slave to work in the palace to expiate her father's offence. The Emperor, moved by her appeal, pardoned Ts'ang Kung.

In the biographical section of the *Historical Record* (88) there is a detailed list of his case-histories from which we may have a peep into the medical thoughts of that time. Of the twenty five cases he has left us—almost the only record of its kind for the next 1,500 years—ten are reported as fatal. Unlike Galen and most medical writers, who usually made exaggerated accounts of successful cures with the object of puffing the author's reputation, Ts'ang Kung was more modest for he admitted his failures with admirable frankness. He confessed that his prognosis was not always correct and that he could not cure any disease unless the pulse indications were favourable. He kept these records with a double purpose, to estimate the percentage of successes and failures and to find a guide for future predictions. These case-histories are not to be compared with those of Hippocrates for they are not of much scientific value. The signs

(88) 史記倉公傳 *Shih Chi Ts'ang Kung Chuan*.

and symptoms of diseases were practically left undescribed, while too much stress was laid on the pulse readings which were so vague that not much could be made out of them. He had also a weakness for predicting the result of an illness and tried to propound all sorts of theories to fit his prophecy. Of the twenty five cases recorded six were women and two children. The diseases enumerated were cancer of the stomach, several varieties of indigestion, retention of urine, cystitis, amenorrhoea, intestinal worms, rheumatism, paralysis, aneurysm, toothache, haemoptysis, kidney diseases, etc. In treatment he mostly employed drugs but sometimes resorted to acupuncture and hydrotherapy. He taught five pupils but not one of them became known to the medical world. He left no writings behind.

After Ts'ang Kung the practice of taking clinical case-histories died out until the Sung dynasty when it was again taken up with a fervour which has continued unabated to the present time.

Chang Chung-ching (張仲景), the second of the trio, is the greatest physician that China has ever produced. He is often spoken of as the Chinese Hippocrates and is venerated as the Sage of Medicine. A native of Nan Yang he received his medical education from Chang Pai-tsu (張伯祖). Very little is known of his life except that during the reign of Ling Ti, 168 A.D., he graduated as doctor of literature, and about 196 A.D. held office as mayor of Chang-sha for some time. It is strange that no record of him is found even in the *Han Annals* (漢書), a work which contains a very full collection of the lives of all the important men of that period. Our knowledge of this great physician is not based on any biography written of him at that time but on records pieced together by the able scholarship of Lu Chiu-chih (陸九芝). It is said that he was very fond of study and noted for his thrift and filial piety. He quickly outstripped his teacher in medical skill and became widely known in his district. Later, he repaired to the capital where he soon earned the reputation of being the most famous doctor of the day.

Chang Chung-ching is especially known to posterity by his *Shang Han Lun* (傷寒論) or *Essay on Typhoid*, which is one of the most important medical classics, ranking with Huang Ti's *Nei Ching* (黃帝內經) or *Internal Classic* in importance. This work does not, as the name implies, deal with typhoid only, but with other fevers as well. It consists of ten volumes and was edited by Wang Shu-ho (王叔和), the great authority on the pulse, who flourished about the Chin dynasty (280 A.D.). There has been much discussion over the question of its original form. According to the author's own preface the title of the book was *Shang Han Cha Pin Lun* (傷寒雜病論合十六卷) or *Essay on Typhoid and Miscellaneous Diseases Combined*, in sixteen volumes. But no record of such a work is

found in any of the bibliographies. In the *Annals of Literature* of the Sui dynasty (隋經籍志), mention is made of Chang Chung-ching's *Discussion on Typhoid* in ten volumes (張仲景辨傷寒十卷). Again, in the *Annals of Art* of the New T'ang dynasty (新唐藝文志) there is one book entitled *Shang Han Tsu Pin Lun* (傷寒卒病論十卷) or *Essay on Typhoid and Other Diseases*, in ten volumes, while the *Annals of Art* of the Sung dynasty (宋藝文志) records a Chang Chung-ching's *Shang Han Lun* (傷寒論十卷) or *Essay on Typhoid*, in ten volumes. This last work is the one which has been handed down to the present time. From a study of all available references on this subject it appears that originally Chang's writings may have been published under one title, *Essay on Typhoid and Miscellaneous Diseases Combined*, in sixteen volumes, but later the work was split into two parts, namely, the *Shan Han Lun* (傷寒論) or *Essay on Typhoid* and the *Chin Kuei Yao Lüeh* (金匱要略) or *Synopsis of the Golden Chamber*. Ten volumes make up the former, and the remaining six the latter.

Many scholars condemned Wang Shu-ho for altering the original while he was editing the book. Fang Chung-hang (方中行), who lived about 1580 A.D., was the first to dispute Wang's plan of arrangement. He wrote the *Shang Han Lun T'iao Pien* (傷寒論條辨) or *Discussion on Essay on Typhoid*. Following in the same strain but with greater vigour, Yü Chia-yen (喻嘉言) issued his *Shang Han Lun Ch'ung Pien* (傷寒論重編) or *Essay on Typhoid Re-edited*. This book was published about 1853 A.D. Cheng Chiao-ch'ing (程郊青) in his *Shang Han Lun Hou Tiao Pien* (傷寒論後條辨) or *More Discussion on Essay on Typhoid* went still further in attacking Wang Shu-ho, but he stooped to cursing and reviling; his manner was most undignified. After this, however, the consensus of opinion went to the other extreme so that Wang's service was lauded far beyond its proper merits. Out of this controversy grew numerous commentaries, each claiming to have the right interpretations and to have restored the work to its original form.

It must be remembered, however, that Wang Shu-ho was the most noted physician of his time. He lived only two hundred years after Chang Chung-ching and he was in a better position to secure reliable material for editing the book than subsequent writers who flourished as much as one or almost two thousand years later. Whatever may be the defects of his edition the fact remains that after the troublous period of the Three Kingdoms most of Chang's writings had been lost or were fragmentary. Were it not for his patient labours and research this precious monograph, even as it is, would have been entirely lost to posterity.

As to the merits of the book itself all are agreed that it is one of the most valuable works on medicine. The esteem in which it was

held by native doctors may be gathered from the pronouncements of various great writers. According to Huang-fu Mi (皇甫謐), author of the *Chia I Ching* (甲乙經), "most of the remedies recommended are very effective." Tao Hung-ching (陶弘景), an authority on materia medica, states that "Chang Chung-ching's book is the first treatise on treatment." The celebrated surgeon Hua T'o described it as a "real life-saving book," while Sun Szu-mo (孫思邈) who compiled the *Thousand Gold Remedies* (千金方), extolled it as being a most profound medical treatise. The fame of the book is further enhanced by the classic style in which it was written, as good literature is greatly admired by the Chinese people. This *Essay on Typhoid* is usually considered as the medical "Four Books," Huang Ti's *Nei Ching* being the "Five Classics." So popular has it become that, according to the *Medical Bibliography* (歷代醫學書目提要) 115 commentaries, concordances or editions of this work have already been published and more are being turned out every year.

The best edition in existence is that by Cheng Wu-i (成無己) of the Chin dynasty. It is composed of 14 volumes, ten of which consist of the original text by Wang Shu-ho, the remaining four being by Cheng himself. There are 22 essays, 397 rules for the treatment of diseases, and 113 prescriptions. These prescriptions, the first of their kind in Chinese medicine, were scientifically written as they contain only a few potent drugs, instead of the later "shot gun" prescriptions of one or two dozen more or less inert ingredients. The antipyretic treatment of fever by drugs, as well as by cold water, was described. To sweat, or not to sweat, was considered such an important question that a special chapter was devoted to this point, numerous indications for and against inducing sweating being given. Chang Chung-ching's two favourite drugs being cinnamomum cassia (桂枝) and bupleurum falcatum (柴胡), these formed the basis of most of his prescriptions. The formulas are as follows, a tael being the Chinese ounce:

CINNAMOMUM CASSIA DECOCTION

Cinnamomum cassia branch, without bark	3 taels
Paeonia albiflora, wash in wine	3 "
Roasted licorice	2 "
Raw ginger, cut in slices	3 "
Peeled dates	12 pieces
Water	7 pints

Boil mixture over a slow fire. Dose, 1 pint, to be taken warm and followed by a pint of hot thin congee. If necessary, repeat the dose.

BUPLEURUM FALCATUM DECOCTION

Bupleurum falcatum	8 taels
Scutellaria macrantha	3 "
Ginseng	3 "
Licorice	3 "
Raw ginger	3 "
Pinellia tuberifera	5 ho
Dates	12 pieces
Water	13 pints

Take 6 pints of the decoction, throw away dregs, and re-boil. Dose, 1 pint, three times a day.

Chang Chung-ching was perhaps the first to employ enemas to evacuate the bowels. He writes, "do not give drastic purgatives for the constipation of typhoid, for the internal secretion has dried up. An enema of pig's bile or the juice of *thladiantha dubia* (土瓜根) should be administered." The directions for preparing the enema are given thus: Secure a large pig's gall; mix the bile with a little vinegar. Take a bamboo tube 3 or 4 inches long, insert half of it into the rectum and pour in the mixture.

Another book by Chang Chung-ching, as already mentioned, is the *Chin Kuei Yao Lüeh* (金匱要略) or *Synopsis of the Golden Chamber*, which is also regarded as a classic. It deals with miscellaneous diseases, and is less famous than the *Essay on Typhoid*. The edition by Hsü Pin (徐彬), of the Ch'ing dynasty, is generally regarded as the most satisfactory. Other works attributed to Chang Chung-ching are: *The Huang Su Prescriptions* (黃素方), 25 volumes; *Typhoid Fever Remedies* (傷寒身驗方), 1 volume; *Diagnostic Methods* (評病要方), 2 volumes; *Prescriptions for Women's Diseases* (療婦人方), 2 volumes; *Chang Chung-ching's Prescriptions* (張仲景方), 15 volumes; *The Pulse Classic* (脈經) *Essay on Nutrition of the Five Organs* (五臟榮衛論), *Essay on the Five Organs* (五臟論), *On the Treatment of Jaundice* (療黃疸) *Essay on the Teeth and Mouth* (口齒論), each in one volume. But these books are unimportant and all have been lost.

Before the Han dynasty, treatment was chiefly confined to acupuncture, moxa, massage and medicinal draughts. Medical writings were entirely philosophical. With the advent of Chang Chung-ching a new era was inaugurated. Diseases were studied more from a clinical standpoint, emphasis being laid on the physical signs, symptoms and course of an illness, the methods of treatment and the action of drugs rather than on the theories of disease as in former times. Chang Chung-ching had an unusual opportunity for studying the clinical manifestations of fevers, especially typhoid. In the preface to his monograph on this subject he said that of the

two hundred odd inhabitants in his native village more than two-thirds died within the course of ten years. Seventy per cent of these deaths were due to typhoid. He was so impressed with the severity of one epidemic that he devoted his time and energy to this particular malady. As a result of his labours the immortal work, *Essay on Typhoid*, was produced. He stands above the crowd not only on account of his keen power of observation but also because of his lofty ideals. He gives to the medical profession a high conception of its dignity and its noble mission in life. The incompetence and worldly attitude of the then practising physicians were a source of great regret to him. He lamented the ignorance and credulity of the general public concerning medical matters. After his death scientific medicine may be said to have degenerated into dogmatic formalism. No later writing of any value or originality appeared until the Sung dynasty, a gap of nearly one thousand years.

The last of the trio and a contemporary of Chang Chung-ching was Hua T'o, the most famous surgeon of China, who is often worshipped as the God of Surgery (89). He was born somewhere about 190 A.D. in the romantic period of the Three Kingdoms. A native of Ch'iao in the state of P'ei he had his education at Hsu T'u. About the time when Chen Kuei was Prime Minister he obtained the degree of Master of Arts. Though many literary positions were offered him, he refused them and took to medicine.

Legend has it that he was fond of travel, roaming over mountains and hills and had many strange encounters. One day he was resting in front of an old grotto when he heard voices discussing methods of cure. Hua T'o came near the cave to listen when one of the voices said: "Here is Hua, we can give him our secret." But the other replied: "That lad is greedy and cruel, how can we give it to him?" Being surprised, Hua T'o jumped into the cave, saluted the venerable hermits, who were dressed in bark with grass head-gear, and said: "I have just heard you two honourable men discussing medicine and I could not resist staying here. I am deeply interested in this life-saving work, only I feel sorry that I have not acquired any effective ways of applying it. If you would only consider my humble appeal and kindly enlighten me I shall feel for ever grateful." The first old man responded: "We are not stingy about the secret, only it may give you trouble in future. However, if you do not discriminate between the high and the low, the rich and the poor, the noble and the common, refuse bribery, be not afraid of hardships, and be kind to the old as well as the young, you will get out of the calamity eventually." Hua T'o bowed respectfully and

(89) In many parts of the country temples called Hua Ta Hsien Miao 華大仙廟 are erected to perpetuate his memory.

thanked them, saying: "I will faithfully remember these words." The two men smilingly pointed to the east cave: "On the top of the stone couch you will find a book. Take it and be careful not to show it to others." After Hua T'o got possession of the manuscript he looked round but couldn't see the two old men. Being frightened he hurriedly left the place. All of a sudden rain and storm broke out and the cave crumbled. He read the book through and found it contained many strange theories which when put to practice were wonderfully effective(90).

It is said that he used very few drugs in his prescriptions and was so accurate in dispensing that he never took the trouble to weigh the ingredients. In acupuncture he only punctured a few spots. He was a most accurate diagnostician and could predict the result of any disease with mathematical precision. A pioneer of hydrotherapy he applied it with marked success in a case of long continued fever. In spite of the cold weather he caused the patient, a woman, to sit inside a stone trough and ordered his assistants to pour one hundred bucketfuls of cold water over her. When only seven or eight buckets had been emptied the patient shivered so violently that his assistants were scared and wanted to stop. Hua T'o, however, insisted on giving the full number. After about eighty bucketfuls vapour began to appear which gradually rose to two or three feet around the patient's body. The hundredth bucketful poured, Hua T'o then lighted a fire to warm the bed for the patient who was heavily covered with quilts until a thorough sweating ensued. The patient recovered under this heroic treatment.

He was also the first exponent of systematic exercise. His observations on the value of exercise in its relation to health were fully described in his lecture to one of his disciples. "The body," he remarked, "needs exercise, only it must not be to the point of exhaustion for exercise expels the bad air in the system, promotes free circulation of the blood, and prevents sickness. The used door-step never rots, so is the body. That is why the ancients practised the bear's neck, the fowl's twist, swaying the body, and moving the joints to prevent old age. I have a system of exercise called the frolics of the five animals (五禽之戲), which are the tiger, the deer, the bear, the monkey and the bird. It removes disease, strengthens the legs, and ensures health. If one feels out of sorts just practise any one of these frolics. It will produce sweating, give a feeling of lightness of the body and increase the appetite." Unfortunately nothing is now known of these exercises. What is still handed down to the present time are only two books on this subject, namely the *I Ching Ching* (易筋經) or *Canon of Changing the Sinews* and the *Pa Tuan Chin* (八段錦) or *Eight Precious Chapters*. The

(90) 魏志 *Wei Annals*.

former is attributed to Bodhidharma (達摩), a famous boxer of the Wei dynasty. It is more of a system of deep breathing than active exercise. The latter, said to be written in the Sung dynasty by an unknown author, contains twelve lessons on surface development, generally known as tensing movements.

But Hua T'o's fame rests chiefly on his discovery of the use of anaesthetics and his marvellous skill as a surgeon. It may be pointed out that four hundred years before him Pien Ch'iao had employed these methods. The story is recorded in the *Lecius*. It is usual to associate anaesthetics with the name of Hua T'o who, it is said, performed all sorts of operations by this means. According to the *Annals of the Later Han Dynasty* he caused the patient to take an effervescent powder in wine which produced numbness and insensibility. He opened the abdomen or back, as the case might be, washed, cut, or removed the diseased portion. He sutured the parts together and then applied a salve to the wound which cleared up in four or five days, completely returning to normal within a month. The *Biography of Hua T'o* gives another account of his performing an operation under anaesthetics. One man suffered from sharp cutting pains in the belly. Within ten days the whiskers and eyebrows dropped out. Hua T'o diagnosed the case as gangrene of the spleen and advised operation. Having administered a dose of medicine he put the patient in a recumbent position and opened the abdomen. The spleen was found half gangrenous. This was excised, the wound smeared with an ointment, and another dose of medicine was given. The patient made a complete recovery after one hundred days (91).

It is not known what was the exact composition of the narcotic wine of Pien Ch'iao or the effervescent powder of Hua T'o. Later physicians, however, employed *datura alba*, *rhododendron sinense*, *jasmine sambac*, and various species of *aconite* for this purpose.

A long list of his marvellous cures of strange diseases is recorded in the *Wei and Han Annals*, *Chronicle of the Three Kingdoms*, and other historical works dealing with that period. This includes all sorts of operations which range from venesection and acupuncture to laparotomy, excision of spleen, intestines and liver. Sometimes he worked without any anaesthetic as in the case of Kuan Kung, a famous general of the Three Kingdoms, now deified as the God of War, whom he operated on for a poisoned arrow wound of the arm (92). Another story has it that he even offered to cure the headaches of a king by opening the skull which offer, of course, was declined.

Hua T'o attended most of the notables of that period, among them Ts'ao Ts'ao, King of Wei, who appointed him as his personal physician. The latter was hot-tempered, irritable and hard to please.

(91) 後漢書方術傳 *Hou Han Shu Fang Shu Chuan*.

(92) 襄陽府志 *Shang Yang Fu Chih* or *Topography of Shang Yang Prefecture*.

Not satisfied with the practice of medicine, as the profession was then held in low esteem by the people, and being also homesick Hua T'o obtained leave to visit his native place under the pretext that his wife was sick. However, he did not return to court after his leave expired though repeatedly sent for. Ts'ao Ts'ao knew of this deception and was so enraged with him that he had him arrested, thrown into prison, and later caused him to be killed. Just before his death Hua T'o gave his manuscripts to the warder, who, however, dared not accept them. He then burnt all his papers. Legend has it that a few leaves of his work were recovered from the ashes. They described the method of castration which remained the only operation still practised by the Chinese. His death occurred when he was near the century mark. Being a great exponent of the art of conserving health he retained a youthful appearance even up to the end. Of his pupils, two—Wu P'u (吳普) and Fan A (樊阿)—had become famous. Wu acquired all his master's skill in treating diseases. He diligently practised gymnastic exercises and lived to over ninety years with teeth, eyesight and hearing in good condition. Fan specialized in acupuncture performing skilful feats which no average doctor of that time dared attempt. The books bearing Hua T'o's name are two, the *Nei Chao Tu* (內照圖) and the *Chung Tsang Ching* (中藏經). It is obvious that they are forgeries but they date from an early period. In the last named work is a prescription which gives the earliest account of the internal use of calomel in therapeutics.

Undoubtedly, Hua T'o is the greatest Chinese surgeon who ever lived. It is a matter of deep regret that, in spite of his great discovery of the use of anaesthetics, Chinese surgery has never had a chance to develop, on account of the Confucian dogma which holds the body to be sacred and not to be mutilated in any way. With such traditions it could hardly be expected that any progress could be made in anatomy and physiology. And without such fundamental knowledge no operation even of the simplest kind could be performed with real success. Thus the death of this great surgeon also marks the end of Chinese surgery. For since then history does not record the further use of effervescent powders or other substances to cause anaesthesia, nor mention any surgeon who dared attempt major operations.

The first mention of women doctors was in the Han dynasty. It is said that one, Ch'un-yü Yen (淳于衍) by name, was called to the palace to treat the queen to whom she administered a pill composed of aconite (93). Another reference states that she was an obstetrician (94).

(93) 漢書外戚傳 *Han Annals, Biography of Wai Chi.*

(94) 漢書霍光傳 *Han Annals, Biography of Huo Kuang.*

CHAPTER IX

THE DOCTRINE OF THE PULSE

The art of pulse feeling in China is a most mysterious and misunderstood subject. Chinese physicians assert that the entire superstructure of medical practice is built upon the theory of the pulse—the nature, location, course and treatment of every disease depends on this alone. According to the *Nei Ching*, the medical classic, there are four standard methods of diagnosis, namely, observation, auscultation, interrogation, and palpation. Observation means to note the complexion and expression of the face; auscultation to listen to the voice and sound; interrogation to inquire into the history, symptoms and cause of the illness, and the condition of the appetite and excretion; palpation to examine the pulse. At the beginning the relative value of these four methods was in the order named, but in course of time the first three were gradually not so much employed, entire reliance being placed on the last.

The exact date when feeling of the pulse to locate diseases originated in China is unknown. It is recorded in *Ancient History* that Pien Ch'iao, who lived about 255 B.C., was the first exponent of this idea. But Wang Shu-ho of the Chin dynasty about 280 A.D., is generally acknowledged as the greatest authority. He wrote the *Mo Ching* (脈經) or *Pulse Classic*, a work of ten volumes, which is considered one of the standard works on medicine. About the period of the Five Dynasties 907-960 A.D., appeared the *Mo Chüeh* (脈訣) or *Secret of the Pulse* (95) which is also ascribed to Wang Shu-ho. Researches, however, point to its being a spurious work most probably written by Kao Yang-sheng (高陽生). The form and literary style are poor while some of the teachings also differ from the Classic. This has been the occasion for much controversy by later writers.

Reprints of the original classic still exist though extremely scarce. It may be of interest to give here a short history of the various editions of this valuable work during the successive dynasties. First published in the Chin period it remained in an unaltered form throughout the following two dynasties. The *Sui* and *T'ang Annals*,

(95) A French missionary, H. Hervieu, translated it into French in 1735 under the wrong impression that it was a genuine work. This has been retranslated into English first by E. Brookes in 1736 and later published by E. Cave in 1738.

the *Thousand Gold Remedies*, Kan's *Medical Biography*, all mentioned this work. It was not until the time of the Five Dynasties, as already stated above, that great confusion arose by the appearance of the spurious work, the *Secret of the Pulse*, which became so popular that the real classic was gradually forced into oblivion. During the Sung dynasty, Lin I (林億) and others (1068-1078) edited old medical books of the palace under imperial orders and the *Pulse Classic* was included in the collection. In Chia Ting's time Chen K'ung-shih (陳孔碩), having obtained a Chien Yang copy, reprinted it at Tsao Sze, Kwangsi. In the Yuan dynasty (1327) Hsieh Chin-weng (謝綬翁) of Liu Pin reprinted Chen's edition at Tang Lien Academy, Kiangsi. In the Ming period Wu Mien-hsüeh (吳勉學) included it in his *Collection of Medical Reprints*. Unfortunately the typographical errors are such that it is unreadable. In the 3rd year of Wan Li (1576) of the Ming dynasty Hsu Chung-hang (徐中行), councillor of Fukien, ordered Yüan Piao (袁表) to revise Wu's edition with the necessary corrections. Coming to the Ch'ing dynasty we find that Wang Hung-nai (王鉉乃) of Chia Ting rendered a good service in perpetuating the classic by bringing together the Yuan and Ming editions with an old manuscript of his own and another reprint by Chu Ching-t'ang (居敬堂). He carefully revised the text and issued a valuable reprint of it. This again is included in Chow Hsüeh-hai's (周學海) *Collection of Medical Reprints* in 1891.

Treatises on the pulse are extremely numerous and are utterly out of proportion to other branches of medicine. A fair estimate of what native physicians consider important may be gathered from the number of books dealing with that subject. From the *Encyclopaedia of Medicine*, the *Catalogue of Medical Books*, and another catalogue from a private collection, a total of no less than 156 volumes are recorded which is quite a formidable list on one subject alone. Most of volumes are but commentaries of the *Pulse Classic* above mentioned, none being of any value if viewed in the light of modern knowledge.

THEORY OF THE PULSE

Chinese pulse lore is extremely complicated and, in practice, constitutes a very detailed procedure amounting almost to a solemn rite. The examination is made upon both the right and left wrists, the physician using his right hand for the left pulse, his left hand for the right. The middle finger is first laid on the head of the radius, then adding the index and ring fingers whilst the thumb rests upon the dorsum of the carpus. The best time for taking the pulse is the early morning at sunrise. The physician should keep cool and col-

lected, first noting if his own breathing is in order. One inspiration and one expiration constitute one cycle of respiration. The normal ratio is four beats to one respiration.

DIVISIONS OF THE PULSE

According to the *Nan Ching* or *Difficult Classic* the extent of the pulse is one and nine-tenths inches and is divided into three parts called *ts'un* (寸) or inch, *kuan* (關) or bar, and *ch'ih* (尺) or cubit. Each of these divisions has two different and distinct pulses, one internal and one external, making altogether twelve pulses, six on the right and six on the left hand. And each of these twelve pulses correlates with twelve definite internal organs, the normal or abnormal conditions of which it betrays. Thus, according to Wang Shu-ho, the 'inch' pulse of the right hand reveals the condition of the lungs and large intestines, of the left hand the heart and small intestines. The pulse under the 'bar' corresponds on the right to the conditions of the spleen and stomach, on the left to the liver and gall bladder. The pulse felt on the right 'cubit' shows the condition of the gate of life and *san chiao*, on the left 'cubit' it tells the state of the kidneys and bladder. Opinions, however, differ widely concerning this supposed relationship between the pulse and a particular organ. Of the numerous systems four stand out most prominently. The following table will explain matters more clearly.

	1. Wang Shu-ho	2. Nei Ching	3. Golden Chamber	4. Li Shi-chen
<i>Left Wrist</i>				
Inch 寸	External Heart Internal Small Intestine	Heart Mediastinal Viscera	Mediastinal Viscera Heart	Heart Mediastinal Viscera
Bar 關	External Liver Internal Gall Bladder	Liver Diaphragm	Diaphragm & Gall Bladder Liver	Liver Gall Bladder
Cubit 尺	External Kidney Internal Urinary Bladder	Kidney Belly	Small Intestines and Urinary Bladder Kidney	Kidney Small Intestine

	1. Wang Shu-ho	2. Nei Ching	3. Golden Chamber	4. Li Shi-chen
<i>Right Wrist</i>				
Inch 寸	External Lung Internal Large Intestine	Lung Thoracic Organ	Thoracic Organ Lung	Lung Thoracic Organ
Bar 釐	External Spleen Internal Stomach	Stomach Spleen	Stomach Spleen	Stomach Spleen
Cubit 尺	External Gate of Life Internal San Chiao	Kidney Belly	Large Intestines Kidney	Kidney Large Intestines

This phase of Chinese pulse lore is the most absurd for no two interpretations are alike and one is at a loss to know which to follow. It is also inconceivable how the pulse at a given point can give two distinct signs and reveal the state of two different organs. Great emphasis is laid on its varieties. Indeed, the list of variations is an endless one. Not only are the rate, character, rhythm, volume, tension, etc. minutely observed but the age, sex, temperament, constitution, weight and growth of the patient as well as the time of the day, season of the year, influence of the constellation are also taken into consideration. These fine distinctions, however, exist only on paper for no one can give a satisfactory demonstration of them.

VARIETIES OF THE PULSE

There are four principal pulses: *Fu* (浮) superficial, a light flowing pulse like a piece of wood floating on water; *Ch'en* (沉) deep, a deeply impressed pulse like a stone thrown into water; *Ch'ih* (遲) slow, a pulse with three beats to one cycle of respiration; and *Shu* (數) quick, a pulse with six beats to one cycle of respiration. In addition to the above main types there are a host of subsidiary pulses which vary according to different authors. The following is from Li Shi-chen, the famous compiler of the *Pen-Ts'ao Kang-Mu*(96), who is also recognized as one of the authorities on the subject.

(96) 本草綱目 Pen-Ts'ao Kang-Mu or The Great Herbal, published in 1590. This is a standard work on Chinese materia medica.

<i>Hua</i>	滑	slippery; like pebbles rolling in a basin.
<i>Se</i>	澹	small; fine, slow and short like scraping bamboo with a knife.
<i>Hsü</i>	虛	empty; slow, large and compressible.
<i>Shih</i>	實	full; large, long and slightly tense, felt on both light and heavy pressure.
<i>Ch'ang</i>	長	long; neither large nor small; the stroke markedly prolonged.
<i>Tuan</i>	短	short; no volume, strikes the finger sharply and leaves it quickly.
<i>Hung</i>	洪	overflowing; full, bounding, forceful rising and gradual decline.
<i>Wei</i>	微	thready; very fine and soft, easily obliterated by pressure.
<i>Chin</i>	緊	tense; hard and full like a cord.
<i>Huan</i>	緩	tardy; four beats to one cycle of respiration, equal strength, like willow branches swaying to a light breeze.
<i>K'ung</i>	朶	hollow; superficial, soft and hollow like an onion stalk.
<i>Hsien</i>	絃	taut; like a tremulous musical string.
<i>Kê</i>	革	hard; tense and hollow like touching the surface of a drum.
<i>Lao</i>	牢	wiry; deep, strong and slightly taut.
<i>Ju</i>	濡	soft; superficial and fine, like thread floating on water.
<i>Jo</i>	弱	feeble; very soft and deep, felt on light touch and disappearing on pressure.
<i>San</i>	散	scattered; large, irregular like willow flowers scattering with the wind.
<i>Hsi</i>	細	slender; smaller than feeble but always perceptible, thin like a silk thread.
<i>Fu</i>	伏	hidden; embedded in the muscles, only felt on strong pressure.
<i>Tung</i>	動	tremulous; quick and jerky, pulsation covering a space no larger than a pea.
<i>Ts'u</i>	促	running; rapid with occasional missing beat.
<i>Chieh</i>	結	intermittent; slow with occasional missing beat.
<i>Tai</i>	代	irregular; tremulous, beats occur at irregular intervals.

INDICATIONS OF THE PULSE

The pulse indications are very important. Each variety or combination of varieties is believed to reveal a distinct disease. Thus a *fu* or superficial pulse, which belongs to the *yang* or male principle,

points to complaints externally contracted through the six influences: wind, cold, dampness, heat, dryness and fire. If a pulse is superficial and strong, it indicates wind and heat; if superficial and weak, deficiency of blood. If it is slow, it means external chills; if quick, wind and fever. If the same pulse is *chin* or tense, it signifies wind and cold; if *huan* or tardy, rheumatism. A combination of the signs superficial and *fu* or soft denotes sunstroke; superficial and *k'ung* or hollow, haemorrhage; superficial and *hung* or overflowing, weakness and fire; superficial and *wei* or thready, fatigue through overwork; superficial and *se* or small, seminal weakness; superficial and *san* or scattered, exhaustion and collapse; superficial and *hsien* or taut, indigestion; and superficial and *hua* or slippery, wind and phlegm.

A *ch'en* or deep pulse which belongs to the *yin* or female principle, indicates external disease due to the seven passions, namely: joy, anger, anxiety, worry, grief, fear, and shock. If the pulse is deep and slow there is weakness and cold; deep and quick, latent heat. If it is tense it means colic due to chills; if it is tardy, accumulation of water. A deep and slippery pulse points to indigestion; a deep and hidden pulse signifies vomiting and diarrhoea.

According to Chinese anatomy the internal organs are of two kinds; the five *tsang* or solid organs, which consist of the heart, liver, spleen, lungs and kidneys and the six *fu* or hollow viscera, which are the gall bladder, stomach, large intestine, small intestine, urinary bladder and the *san chiao*. The *Ch'ih* or slow pulse reveals the condition of the organs. When it is strong it indicates pain; when it is weak it indicates debility. The *Shu* or quick pulse tells the diseases in the viscera. Internal heat gives a quick and strong pulse; abscess, a quick and weak pulse.

A slippery pulse denotes diseases due to mucus. If the right pulse on the 'bar' is slippery there is wind and mucus. If the same pulse appears on the 'inch' there will be vomiting and regurgitation. When it is found on the 'cubit' it means pus and blood in the stool. A small, fine pulse indicates debility and collapse. If the pulse on the 'cubit' is small it signifies loss of blood and vitality; on the 'inch' profuse perspiration; on the 'bar' cessation of secretions. If the pulse on the 'bar' is taut like a musical string, it denotes phlegm; on the 'inch,' headaches; on the 'cubit,' colicky pains. A tense pulse indicates pain due to chills; a full, overflowing pulse, burns and scalds; a tremulous, quick pulse, pain caused by internal heat or excessive sweating and haemorrhage. The long pulse, the short pulse, the large pulse and the small pulse all denote derangement of the respiratory system. A soft pulse points to deficiency of the *yang* essence; a feeble pulse, deficiency of the *yin* essence. A thready pulse indicates general debility while a scattered pulse means extreme exhaustion.

A hard pulse signifies seminal loss in men and uterine haemorrhage in women; a wiry pulse hernia or heart pains; and a hollow pulse excessive loss of blood.

PROGNOSTICATIONS OF THE PULSE

We come now to another interesting feature of this study, namely, the prognostications of the pulse. Old-style physicians profess to be able to predict the result of an illness by its various signs. In cases of apoplexy, the pulse should be superficial and slow; if it is firm, rapid and large there is danger. In typhoid fever if the pulse be superficial, full and overflowing, no anxiety need be felt, but if it be thready, small and soft it is serious. In malaria fever a taut pulse is favourable. If it be taut and slow it indicates heat; if taut and quick it indicates chills. It is unfavourable if the pulse is large, scattered and irregular. In cases of diarrhoea the pulse is deep, small, slippery and feeble; and if it is strong, large, superficial and quick, there is danger. A good sign in vomiting and regurgitation is a superficial and slippery pulse; when it is deep, quick, fine and small it indicates bleeding in the intestines and the case is hopeless. One should not be alarmed to find an irregular pulse in cholera. It is only when this sign is found together with a curled tongue and shrivelled testicles that recovery is very improbable. The pulse in bronchial diseases is generally superficial and small and they are easy to cure; when it is deep, hidden and tense death is near. It is favourable if the pulse in asthma is superficial and slippery; but unfavourable, if deep and small especially when the hands and feet are cold. In cases of high fever, a quick and overflowing pulse is desirable; if it be thready and feeble, accompanied by low spirits, the condition is fatal. In wasting diseases the pulse is weak and quick; if it be thin and small death is certain. In cases of loss of blood no anxiety need be felt if the pulse is hollow, small and tardy; but if hollow, large and quick danger is apprehended. Where there is pulmonary congestion, a wiry and large pulse is favourable; but few can recover quickly if it is deep, small and thready.

A good sign in diabetes is a large and quick pulse; if it is slender, thready, short and small, a cure is almost hopeless. In retention of urine the nose is usually yellow. If the pulse is full and large the disease is curable; but if slow and small recovery is most difficult. In cases of insanity, if the pulse is superficial and overflowing it is a good omen unfavourable if deep and quick. The pulse in epilepsy should be superficial and tardy; if it is deep, small and quick it is a sign of death.

There are nine kinds of pain in the abdomen. A slender and slow pulse indicates quick recovery; a superficial and large pulse de-

notes a slow convalescence. Ruptures are due to trouble in the liver and the pulse is always taut. If it is wiry and rapid all is well; if feeble and rapid it is fatal. A favourable indication in jaundice is a full, overflowing and quick pulse; it is bad if the pulse be superficial, large, full and strong; if it is deep, fine and thready no doctor's art is of avail. In accumulation of humours in the system, if the pulse is strong and full no danger exists; but if deep and slender the case is serious. The pulse in diseases caused by evil spirits varies on both wrists; sometimes it is large and sometimes small, sometimes quick and sometimes slow. Where obnoxious influences exist and the belly swells up, a tense and fine pulse is hopeful; a large and superficial pulse is serious. In cancer and carbuncle a full, overflowing and large pulse before suppuration is good but the same pulse after suppuration is critical. In abscess of the lungs the pulse on the 'inch' is quick and full. In collapse of the lungs it is quick and weak. In both these diseases the complexion is white and the pulse short and small. If the pulse is quick and large in compass it means loss of air and blood. In cancer of the intestines a quick and slippery pulse is favourable, but if deep and slender the patient may as well prepare for the future!

Besides the foregoing there are seven special pulses which indicate impending death. If the pulse resembles the pecking of a bird, water dripping from a roof crack, or the upsetting of a cup it means extinction of the spleen pulse and death may be expected within four days. If the pulse resembles feathers blown by the wind, or feathers brushing against the skin, it indicates serious disease of the lungs and the end will come within three days. It is a sign of fatal kidney trouble and death may happen within four days if the pulse is like the snapping of a cord or like the flipping of the finger against a stone. When the liver ceases to perform its function the pulse is like the string of a new bow or like the blunt edge of a sword. The patient will die within eight days. If the pulse resembles the rapid rolling of peas death may be expected in a day. A pulse acting like a fish or shrimp darting about in the water or a pulse like water oozing from a spring is a fatal symptom.

VARIATIONS OF THE PULSE

An important point, which should also be taken into consideration, when making pulse tests, is the normal variation dependent upon the season of the year, age, constitution and sex of the patient. In spring the pulse is taut and tremulous like a musical string, in summer it is full and overflowing, in autumn it is elastic, and in winter it is deep like a stone thrown into water.

A thin person's pulse is generally superficial and full, a fat person's pulse is usually deep and quick. Five beats to one cycle of respiration are normal in a hot-tempered person, but four beats to one cycle of respiration in a person of slow temperament mean sickness. In the aged the pulse is mostly empty, in young people it is large, and in infants rapid—about seven beats to one cycle of respiration. Northerners often have strong and full pulses while Southerners soft and weak pulses.

Differentiation is also made between the pulse of the sexes. In man the pulse on the left hand should be large to correspond with the *yang* principle, but in woman it should be the opposite because the *yin* principle predominates on the right. Again the 'cubit' pulse in man is always slow, weak and compressible while in woman it is usually strong, large and long. Marvellous are the claims made by pulse theorists regarding the diagnostic value of pulse feeling. One is able to tell, it is affirmed, whether or not a woman is pregnant, or even to predict the sex and development of the uterine foetus by these tests alone. For instance, in cases of cessation of menstruation with no apparent disease, if the three pulses are slippery it indicates pregnancy. If, in addition, they are rapid and scattered it shows three months' conception, if rapid and unscattered five months. If the pulse on the left wrist is rapid a son may be expected, but if the right pulse is rapid it is certain to be a daughter! On the left hand a superficial and overflowing 'cubit' pulse or a large 'inch' pulse denotes a male child; on the right hand a deep and full 'cubit' pulse or a deep and slender 'inch' pulse indicates a female child. If the 'cubit' pulse on both wrists is overflowing it means twin boys; if deep and full twin girls. Triplets may be looked for when the pulses of both wrists are smooth and equal. They will be all of the weaker sex. But if the pulses show the opposite nature all three will be of the stronger sex.

And stranger still are the virtues given to a special kind of pulse called the 'Tai-Su Pulse' (太素脈) which, it is said, can reveal the destiny and fortune of a person. According to the *Secrets of the Tai-Su Pulse* by Pang Yung-kuang (彭用光) of the Ming dynasty, this method originated from Feng Chen-jen (馮真人) of the Eastern Sea. In the Sung dynasty about 963 A.D., he came out of a cave and introduced it into practice. The following two examples will serve to give one an idea what it presumes to be.

(a) To tell whether a man is noble or common, will live long or short.

As the kidney controls life therefore if the 'kidney' pulse of the left hand is deep and regular it indicates a noble rank; if weak and slender it means poverty at old age. A deep, regular and slippery pulse points to long life.

(b) The pulse of the rich and poor.

A 'spleen' pulse means honours and riches; but if the beats have no root then this good fortune will not last. A rich and noble man's pulse is slow and regular.

In addition to the above the pulse, it is alleged, can tell whether one is a monk or a taoist, clever or stupid, when disaster comes, the official rank, and even the ability of one's wife! (97)

Such, in general, is the sum of what Chinese think of this doctrine of the pulse. Foreign writers, however, usually condemn this as a system of downright and solemn quackery (98). Perhaps the modern doctor, with so many instruments to aid him in diagnosis, has lost many of his faculties of observation, especially the sense of touch. By constant use and pure concentration the old-style physicians may have developed this power to such an extent that they can tell many things imperceptible to the average person. Be that as it may, scientific medicine has made such rapid progress and the various tests—both chemical and instrumental—are so accurate and reliable that this feeling of the pulse as a diagnostic method has lost much of its practical value. At the present time we cannot but relegate this pulse lore of Cathay to the domain of medical history and view it only as one of China's contributions to medicine in the past (99).

(97) 李鴻, 中國的脈學大公報醫藥週刊 Li T'ao: *Chinese Pulse Lore*, supplement to the *Tai Kung Pao*.

(98) Dr. Hobson in the *Medical Times and Gazette*, Nov. 1860; Dr. Henderson in *The Medicine and Medical Practice of the Chinese*, 1864; and Mr. Arlington in *The Mystic Art of Pulse Feeling in China*, 1924, all spoke in no unmeasured terms against the false claims made for this practice. It may be added that there were not a few prominent Chinese who did not believe in the infallibility of this method. For instance, Wang Hai-tsang 王海藏 observes that "if a patient keeps silent and simply asks the doctor to feel the pulse to test his ability does he know that in fever the pulse is rapid, in weakness slow, in a strong constitution it is full, and in a debilitated person it is weak? The above conditions may be indicated by the pulse. As to the cause of the illness or the objects that produce the injury can they be ascertained by the pulse alone?" Others classify pulse taking only as one of the methods of diagnosis, not to the exclusion of other measures as is the custom now prevailing. Pien Ch'iao says "to know by observation is sublime, by auscultation, wonderful, by interrogation, skilful, by palpation, art." Chang Chung-ching remarked that the skilful doctor knew by observation, the mediocre doctor by interrogation while the ordinary doctor by palpation. Sun Szu-mo states: "The skilful doctor knows what is wrong by observing alone, the middling doctor by listening, and the inferior doctor by feeling the pulse."

(99) Most of the material for this chapter is from K. C. Wong's *The Pulse Lore of Cathay*, *China Med. Journ.*, Dec. 1928.

CHAPTER X

INFLUENCE OF TAOISM AND BUDDHISM ON MEDICINE

As healing and religion are closely related it is natural that they react on each other in many ways. There are three great religions in China, namely: Taoism, Confucianism and Buddhism. The first two are indigenous while the last was transplanted from India. Taoism, in its original form, was pure philosophy, which later expanded into a system of religious belief from whence it degenerated into superstition. Its founder Lao Tzu, according to legends, was a most marvellous being. Under various assumed names he is supposed to have appeared on the earth at different times as the teacher or adviser of kings and emperors and, though the world remained unaware of his presence, the reformer of successful generations. He was born in a very miraculous manner: A sunbeam descended from heaven assuming the form of a round ball of many colours and entered the womb of a sleeping virgin. Conception took place and Lao Tzu was born from an opening cut under his mother's armpit, after a period of seventy-two years' gestation. At his birth his hair was already white with age and he was accordingly called, as his name implies, 'The Old Boy.'

All this mystery is invented by his followers with a view to elevating him to a divine status. And though history does not give us very definite information this much appears to be certain: According to Szu-ma Ch'ien's account, Lao Tzu was a Keeper of the Archives of Chou State, about the close of the sixth century B.C. Foreseeing the inevitable downfall of the House of Chou, he "resigned his office and went into retirement, cultivating *Tao* and virtue." Then he went on a mysterious journey towards the west whence he disappeared from mortal ken. He left behind him with the keeper of the frontier pass a remarkable work called the *Tao Tê Ching* (道德經) or *Canon of Truth and Virtue* which contains 5,000 characters and is considered as one of the great Chinese classics(100).

Later Taoists divided their teaching into Esoteric and Exoteric,

(100) The *Tao Tê Ching* has been translated into many languages; among notable works are, in English: J. Chalmers, Paul Carus; German: V. von Strauss, Franz Hartmann, Wilhelm; French: Stanislas Julien, Alexandre Ular; Dutch: Henri Borel.

i.e. the mystic and the magical. Lieh Tzu and Chuang Tzu are famous exponents of the mystic side, developing the doctrines of Lao Tzu into a complete system of philosophy; but others like Chang Tao-ling have given way to occultism and alchemy from which arose a sect of charlatans and magicians, who concerned themselves chiefly with the writing of charms, the expelling of devils and divers superstitions.

Exorcising magic, no doubt, existed in China at a very remote period. In the *Li Yün* (禮運) we read that during the Chou dynasty 1122-225 B.C. the kings frequently employed sorcerers to protect themselves from special evils. Special ceremonies against pestilence were performed in spring as well as in autumn (101). In the time of Confucius such ceremonies were quite common. It is stated in the *Analects* that when the villagers were going through these rites, which went by the name *no* (雩), the Sage put on his court robes and stood on the Eastern steps. Shih Huang-ti of the Ch'in dynasty 221-200 B.C. was an ardent believer in Taoism. A slave to superstitious fears he frequently consulted magicians in order to secure the elixir of life. The Han Emperor Wu Ti was also susceptible to these matters, and the hopes of favour at court gave an immense stimulus to this side of the cult.

It was not, however until the reign of Shun Ti 126-145 A.D. that a thorough system of charms and mystic writings was first evolved. Chang Tao-ling (張道陵), popularly known to foreigners as the Taoist Pope, composed a book of charms for the curing of diseases and the expelling of demons. Mayers sums up his life as follows:

張天師



Chang Tao-ling, or the Heavenly Teacher, generally known as the Taoist Pope. He is the inventor of charms and incantations for the curing of disease.

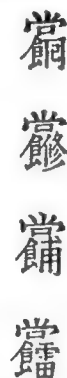
(101) 禮記月令 *Li Chi Yüeh Ling* or *Book of Rites*, Book IV.

Born 34 A.D., said to have been a descendant in the 8th generation of Chang Liang (張良), and celebrated as one of the Immortalized Beings of the Taoist mythology and the patron of this sect. He is reputed as having been born at T'ien Muh Shan, in the modern province of Chekiang, and is said at the age of seven to have already mastered the writings of Lao Tzu and the most recondite treatises relating to the philosophy of divination. Devoting himself wholly to study and meditation, he steadfastly declined the offers made him by the Emperors Ho Ti and Chang Ti, who wished to attract him into the service of the state. Retiring to seclusion in the mountain fastness of Western China, he devoted himself there to the study of alchemy. His search for the elixir of life was successful, thanks to the instruction conveyed in a mystic treatise supernaturally received from the hands of Lao Tzu himself. The later years of the mystic's earthly experience were spent at the mountain called Lung Hu Shan in Kiangsi, and it was here that, at the age of 123, after compounding and swallowing the grand elixir (大丹), he ascended to the heavens to enjoy the bliss of immortality. In imitation, probably, of the Tibetan doctrine of heirship by metempsychosis, the succession is perpetuated, it is said, by the transmigration of the soul of each successor of Chang Tao-ling, on his decease, to the body of some infant or youthful member of the family, whose heirship is supernaturally revealed as soon as the miracle is effected (102).

Similar to the conditions that existed in Europe in the fifteenth and sixteenth centuries, the search for the philosopher's stone and



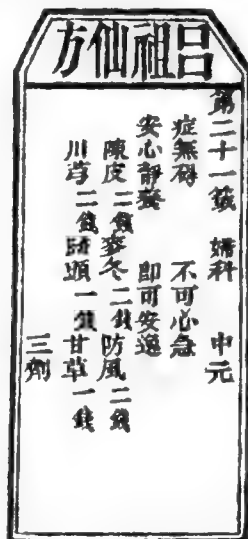
Charms for epidemic diseases given to the author by a Taoist priest. It should be burnt and the ashes mixed with tea and drunk.



Charm to prevent spitting of blood. The paper is burnt and the ashes are to be taken with a decoction of atractylis.

the elixir of life reached its height during the T'ang dynasty. Magicians, doctors and alchemists were found everywhere experimenting with herbs and minerals in an attempt to discover a substance which could confer on the person drinking it, everlasting life and beauty. Of twenty-two rulers of this period seven experimented with these elixirs and died from the effects. In this vain pursuit the time, health, and fortunes of thousands were wasted. To these superstitious experiments, however, we owe a great deal of our knowledge of the actions and uses of many plants but especially of mineral drugs about which the Chinese knew so little.

Among the host of herbs supposed to possess the remarkable power of conferring immortality the cypress and the pine hold the first place. The seeds and resin are highly valued. Other plants like *polygonatum canaliculatum*, *pachyma cocos*, *asparagus lucidus*, *acrous calmus*, chamomile, certain mushrooms, and even such common things as jujubes and lotus seeds are also believed to have this property. In the mineral kingdom cinnabar, gold, silver, jade, talc, tabasheer and preparations of mercury are prized as being capable of prolonging life. The recipes for the preparation of these concoctions are usually very complicated and obscure. The directions for the taking of such medicines are also very fantastic, generally requiring a long period of time.



A Temple prescription from Ling-Yin Monastery, Hangchow.

Another product of Taoism that has a bearing on medicine is the art of deep breathing. Its beneficial effects on health are well

recognized (103). The basis for this practice is found in the *Tao Té Ching* which says: "Feeding the soul so that it does not die is acquisition of the mysterious celestial breath, and the female terrestrial breath. And the openings—mouth and nose—through which these mysterious and female breaths enter, are the root and base of the celestial and terrestrial influences which exist in man. They ought to be inhaled smoothly and slowly, as if they were to be preserved in the body . . . in using those breaths, no exertion is to be made" (104). In the words of Chuang Tzu: "Blowing and gasping, sighing and breathing, expelling the old breath and taking in new: passing time like the dormant bear, and stretching and twisting the neck like a bird—all this merely shows the desire for longevity. This is what doctors who inhale, and the men who nourish their bodies, in order to live as long as P'eng Tsu are fond of doing." Huai Nan-tzu also declares that he who consumes the atmosphere becomes spiritual and attains extreme old age (105). A more detailed description of this process is mentioned by Pao Po-tzu (106): "In beginning to learn the proper use of the breath, one should inhale a breath through the nose, stop up the nose and mentally count one's heart beats. When one has counted one hundred and twenty heart beats, the breath should be exhaled through the mouth. In this method of breathing, every one should make it his aim that his own ears might not hear the sound of either inhalation or exhalation. The rule is to inhale generously and exhale sparingly. One should suspend the feather of a wild goose in front of the nose and mouth. That the feather might not stir while the breath is being expelled, should be one's aim. With gradual practice, one should increase correspondingly the count of heart beats during which the breath is held. After a very long period of time, one should be able to count a thousand heart beats. When an old man has arrived at that stage, then he will be transformed into a young man—each day adding to the transformation" (107).

The second great influence exerted on medicine was the introduction of Buddhism from India about 67 A.D. Some believe it was known in China as early as 217 B.C. but the authorized version is that the Emperor Ming Ti (58-76 A.D.) of the Eastern Han "had a dream in which he saw a high shining image of a god, which appeared to him, and entered his palace. A courtier interpreted the dream by saying the gold image was Buddha, who thus demanded to be worshipped in China; as a consequence, the Emperor sent an em-

(103) 道德經 *Tao Té Ching* or *Canon of Truth and Virtue*, Chapter VI.

(104) Translation by De Groot, in *De Groot: Religion in China*, p. 156.

(105) 淮南子 *Huai Nan Tzu*, Chapter III.

(106) 抱朴子

(107) 抱朴子內篇 *Pao Po Tzu Nei P'ien*, Chapter VIII.

bassy of eighteen men to India, to ask for Buddhist books and teachers. The messengers left the capital (Lo-yang, now Honan-fu) in 63 A.D. and travelled across Central Asia, until they reached Khotan. The exact dates both of the dream and of the return, differ in different accounts. The embassy brought back with it images of Buddha, Buddhist scriptures, and two Buddhist monks, Kas'yapa Matanga, known to the Chinese as She Mo-t'eng (攝摩騰), and Gobarana or Chu Fa-lan (竺法蘭), i.e. Fa-lan from India" (108).

At first the new religion did not make much progress but gradually it gained a strong hold until the T'ang dynasty when it enjoyed the greatest prosperity. As a result of the frequent pilgrimages made by enthusiastic Chinese Buddhists to India and the arrival of many Indian monks in China, the art, science, and other phases of Indian culture were brought over which, in course of time, exerted a profound influence on the life and thought of the people. Hitherto Chinese healing art was entirely indigenous but with the interchange of civilization a change was felt. Noticeably the etiology and pathology of diseases were affected by Buddhist ideas. The body was submerged while the mind was emphasized. "Humanity suffers from two kinds of afflictions—physical and mental. For physical ailments the drugs of Pien Ch'iao will be effective but for mental affections nothing but Buddhist remedies is required." Buddha once told Ch'i Po (耆婆,) "You go and heal his body first, I will come later to treat his mental suffering." It may be said that faith-healing, hypnotism, auto-suggestion and other psychotherapeutic measures mostly originated from Buddhism. And out of these arose the art of meditation (坐禪,) a system of graded mental exercise which aims at developing the mind to a state of mental repose or relaxation. Marvellous are the benefits claimed for this method. It is considered the gateway of health, the highroad to immortality. Many of the educated classes resort to these practices in order to escape from the miseries of the world.

Another contribution by Buddhism is the system of physical exercise commonly known as boxing. This was practised in China from time immemorial but it was due to the monks that it developed into an art. Bodhidharma, or Ta Mo (達摩) as he is generally called by the Chinese, was an ardent advocate of the principle of 'a sound mind in a sound body.' He says: "The spirit should be tranquil and alert, but the body should be strong and active. Without tranquillity one cannot attain wisdom and transform into a Buddha; without health one cannot have good circulation and breathing. Hence the body should be properly exercised so that the muscles and tendons may be supple and the spirit will not then suffer from the misery

(108) Couling: *Encyclopaedia Sinica*, pp. 67-68.

of weakness." Arriving in China in 527 A. D. Bodhidharma first visited the court of Liang Wu Ti, then passed on to the Kingdom of Wei, and finally took up his abode at Lo Yang. He is said to have sat for nine years with his face to a wall, wrapt in meditation. The 'Eighteen Lo Han's Hands,' a special system of exercise, was attributed to him. Observing the haggard features of the monks at Shao Lin monastery (少林寺) he taught them boxing. So successful was his method that it gradually evolved into a complete system known far and wide as the Shao Lin School of boxing.

According to Buddhist views there are six main causes of disease, namely:

1. Disturbance of the Four Elements.
2. Immoderation of food and drink.
3. Wrong methods of meditation.
4. Sinful desires.
5. Evil influences.
6. Devils and demons.

For treatment: the last two classes—devils, demons and evil influences—require the use of incantations, for without the aid of supernatural agencies no cure can be expected. For sinful desires, confession of sin and sincere repentance are necessary; for wrong methods of meditation, the mistakes should be corrected. The doctors' advice should be consulted if the causes are disturbance of the Four Elements, and immoderation of food and drink. The Four Elements are earth, water, fire and wind. If the earth element be abundant there is a feeling of heaviness and weight; if water be in excess salivation and profuse expectoration appear; if fire predominates fever and headache result; and if wind increases difficult breathing is experienced. Each of these four elements gives rise to 101 kinds of diseases, making a total of 404 diseases. Fasting is recommended as the best remedy. However thirsty the patient may feel, do not administer water or liquids for one, two, four or even five days, as the conditions demand, until the symptoms disappear.

Even Taoist writings were frequently influenced by Buddhist thoughts. Thus when Tao Hung-ching composed the missing chapters of Ko Hung's *Handbook of Prescriptions* he made up the list to 101 essays changing the name to *Handbook of 101 Formularies*. Sun Szu-mo, in the *Ch'ien Chin Fang* also says: "When the four airs harmonize with virtue the spirits are at peace. If one air is disturbed 101 diseases will arise; and if the four spirits disagree 404 diseases will come all at the same time."

CHAPTER XI

CULTURAL ASPECTS OF THE HAN AND T'ANG DYNASTIES

Chinese medicine may be said to have reached its zenith during the Han and T'ang dynasties. Its fame extended beyond the borders of the Middle Kingdom. South to Annam and Siam, north to Korea and Japan, its influence was felt. China at this period was what Greece was once to Europe, the source of all morals and culture. Directly or indirectly the neighbouring countries received the germs of science, religion and art from her.

The earliest intercourse between China and Japan was in the Ch'in dynasty 221-210 B.C. Emperor Shih Huang(109), the builder of the Great Wall, being desirous of obtaining immortality, despatched an expedition under Hsü Shih (徐市), a notorious magician, to the Fairy Isles of the Eastern Sea to seek the fountain of youth. This is believed to have some reference to attempts at colonization of the Japanese islands. Later, as direct communication between these two countries was established the invasion of Chinese medicine began. At the commencement of the seventh century energetic young men were sent by the Japanese government to China to study medicine. In 608 A.D. Enichi, Fukuin and others arrived in this country where they stayed for fifteen years. Upon their return they brought many medical books with them. Of these, two works in particular—the *Pin Yüan Hou Lun* (病源後論) and the *Ch'ien Chin Yao Fang* (千金要方) had a marked influence. In the ninth century it completely ousted the native art in Japan and replaced that of Korea. It maintained its supremacy, though not without further development, until the nineteenth century when it was superseded by European medicine.

(109) A memorable event was the Burning of the Books by this Emperor in 213 B.C. Resolving to break all old traditions which he feared might be inimical to progress, he ordered the destruction of all classical literature, followed by the burying alive of 460 of the literati. Fortunately, works on medicine, astrology, and agriculture were not included, otherwise the medical knowledge prior to this period would have been lost to posterity. For this notorious act he was branded as a tyrant in spite of all the other good works he did for the everlasting benefit of the people.

A valuable contribution to pharmacology was Hsü Chih-ts'ai's (徐之才) new classification of the action of drugs. He divided them into ten main classes: *Hsüan* (宣) carminatives, *T'ung* (通) diuretics, *Pu* (補) tonics, *Hsieh* (瀉) purgatives, *Se* (澀) astringents, *Hua* (滑) laxatives, *Tsao* (燥) diaphoretics, *Shih* (濕) demulcents, *Ch'ing* (輕) alteratives, and *Chung* (重) sedatives. Later writers added two more to the above, stimulants and antipyretics, bringing the total to twelve.

Farms for the cultivation of drugs were first established by the government in the Sui dynasty 589-618 A.D.(110). They were located at the Capital where three hundred *mow*(111) of the most fertile land were assigned for the purpose. Youths from sixteen to twenty years of age were engaged as apprentices. After they had learned their trade they were promoted as keepers of the farm should there be a vacancy(112). Such keepers were included in the list of officials in the Medical Bureau with the rank of "Yao Yüan Shih" (藥園師). Their duties were to cultivate the medicinal plants, gather them in the right season, and store them in their proper places(113).

While only four branches of medicine were recognized in the Chou dynasty, the number had increased to seven in the T'ang dynasty. These were: diseases of adults; diseases of children; diseases of the eye and ear, mouth and teeth; cupping, massage and exorcism(114). Four kinds of doctors were also differentiated: physicians, acupuncturists, masseurs, and exorcists. Special chairs were established with a 'Po Shih' (博士) or professor in charge of each department(115). The *Official Repertory of the New T'ang Annals* describes the organization of the Imperial Medical Bureau as follows.

In the Department of Medicine were one Professor of Medicine of 8th grade, A. class; and one assistant of 9th grade, B. class. The students were taught the subjects of internal medicine, ulcers and swellings, children's diseases, ear, eye, mouth and teeth affections, and cupping. In the Department of Acupuncture were one Professor of Acupuncture of 8th grade, B. class; one assistant of 9th grade, B. class; and ten acupuncturists also of 9th grade, B. class. The students were taught the signs of the pulse and the special 'points' for puncture. The Department of Massage had one Professor of Massage and four masseurs, all of 9th grade, B. class. They gave lessons in physical exercise, and treated cases of fractures, injuries and wounds. The Department of Exorcism was in charge of the Professor of Exorcism, an official of 9th grade, B. class, who taught people how to chant incantations, drive away pestilential influences and fast (116).

(110) 隋書百官志 *Sui Annals*, Official Repertory.

(111) A *mow* is a Chinese acre or one-sixth English acre.

(112) 中國醫史 *Chinese Medical History*, p. 39.

(113) 舊唐書職官志 *Old T'ang Annals*, Official Repertory.

(114) 唐六典 *Institutes of the T'ang Dynasty*.

(115) 舊唐書職官志 *Old T'ang Annals*, Official Repertory.

(116) 新唐書百官志 *New T'ang Annals*, Official Repertory.

Chinese writers sometimes praise and at other times ridicule the medical profession. Chia I (賈誼) of the Han dynasty remarked that the 'superior man,' if disinclined for official life, will practise medicine for the reason that a doctor can also serve the people. Ch'êng Yi-ch'uan (程伊川) thought that the scholar who serves his parents should not be ignorant of medicine. Lu Chih (陸贄), a prime minister of the T'ang dynasty, compared the merits of a good doctor with that of a good premier, which made Fan Wen-chêng (范文正) of the Sung dynasty utter the famous saying that if he could not aspire to be a good statesman he would be a good doctor. Medicine itself is spoken of as a 'benevolent art,' and physicians are styled the 'nations's hand.' In spite of these high tributes, however, members of the profession have never been accorded any position in society. The *Annals of Spring and Autumn* (117) state that medical practitioners were held in low esteem by the people, as they "employed poisonous drugs to treat and expel disease, hence the ancients despised them and assigned them a low position in society." The *T'ang Annals* (118) said that "mathematicians, surveyors, fortune-tellers, physiognomists, physicians and magicians were charlatans. The sages did not regard them as educated." But the culminating blow was when Szu-ma Ch'ien, the Herodotus of China, classified doctors in the same category as fortune-tellers, astrologers and palmists. Since then educated people have disdained the practice of medicine as a regular profession. Hence Chu Hsi (朱熹), the famous commentator on the Confucian classics, indicated the social position of physicians in the following words: "Sun Szu-mo was a noted doctor of literature of the T'ang dynasty, but as he practised healing as a profession he was relegated to the class of artisans. What a pity!"

The general distrust of the doctor's ability and character may be further shown by the following quotations and proverbs:

- a. Doctors cannot cure their own complaints. (*Huai Nan Tzu*).
- b. The son of the good sorcerer is generally killed by demons; the son of the great doctor usually dies of disease. (*Ancient Essay*).
- c. It is a middling course to leave a disease untreated. (*Annals of Art and Literature*).
- d. To take no medicine is the best cure. (Proverb).
- e. Medicine does not kill; the physician kills. (Proverb).
- f. Do not take medicine compounded by a doctor who is not backed by the experience of three generations. (*Record of Rites*).
- g. Quack doctors kill people. (Proverb).
- h. What the doctor says is all right, but what he sells is false. (Proverb).

During the Han and T'ang dynasties superstition reached the highest point. A new form of treatment was invented by Chang

(117) 呂氏春秋 *Annals of Spring and Autumn*.

(118) 唐書 *T'ang Annals*.

Tao-ling, a Taoist priest, who made use of charms, incantations and magic for the curing of disease. His followers were called "robbers of five piculs of rice" as they usually exacted this quantity of rice for their services. Seeing the lucrative income enjoyed by these devices, Buddhist monks soon invented their own system of charms. The result was that the market was flooded with the wares and remedies of both religions, each claiming to have the power of conferring every benefit under the sun.

According to the *Praying Cures*, the following legend is told of the origin of charms and spells. In ancient times medicine was divided into thirteen branches, praying cures being one of them. Huang Ti devised charms and mystic writings for the treatment of all diseases. Any illness which could not be cured by the ordinary methods, such as drugs and acupuncture, would be benefited by charms which also had the virtue of warding off evil influences and expelling devils. Those who were sick prayed to heaven and explained the cause of their illness, hence the term 'praying cures.' Ordinary medicine is handed down and known to all, but this special method is seldom seen or heard of; consequently the uninitiated think that it is quackery and mysticism, not knowing that it is in reality one of the forgotten branches of ancient medicine. In the reign of Ch'un Hsi (1174 A.D.) of the Sung dynasty, Lo Ch'i (羅奇) while repairing the banks of the Yellow River, accidentally unearthed a stone tablet engraved with mystic writings. As it was unintelligible he issued a proclamation calling upon people to decipher the mystery. It happened that a Taoist priest named Chang I-ch'a (張一槎) was the only man to understand it and he said that it was formulated by Huang Ti. This was how Lo Chi obtained the secret and he used it for treating diseases with marvellous results. In the Ming dynasty (1506 A.D.) one Hsü Ching-hui (徐景輝) republished the work, amended and enlarged it and in this form it has come down to the present day (119).

A charm is an object which is believed to possess powers over the spirit world. It may be made of any material. Strictly speaking it is usually something written on paper. It forms the greater part of the merchandise of the priests. In medicine, written charms are mostly used and consist of a character, a sentence, a combination of intricate letters ingeniously entwined, or a drawing of some mystic writing on yellow, white or red paper. The shape is usually oblong and varies in size. For the writing, cinnabar is commonly used but sometimes black ink is employed. Handwritten charms are more expensive while authentic scripts bearing the chop of the 'Heavenly Master' himself are considered very valuable and effective. These are

(119) 醫學祝由十三科 I Hsüeh Chu Yu Shih San K'ue.

usually written on silk and hung on the wall. Common people always buy the charms from shops printed from woodcuts, but those who know how to read and write sometimes make their own. The following five points should be strictly observed when writing a charm. It will have no effect when:

1. One is disrespectful and insincere;
2. One reviles the Divine Healer;
3. One is in doubt and undecided;
4. One values money more than life; and
5. One does not make a correct drawing of the charm.

The charm is burnt and the ashes administered to the patient along with tea, hot water, wine or some medicinal decoction. In some cases only written characters are used; others consist simply of an incantation which is to be chanted a certain number of times. Very often charms and incantations go together. Besides being taken internally, charms may be posted over the door, hung on the wall, worn in the hair, suspended from the neck, tied on the coat, carried in the pocket, stitched to bed curtains, or stuck on the body! They are given in all diseases which human flesh is heir to. The following are a few specimens of the various kinds of charms(120).

A popular medicine god is Lü Tung-pin (呂洞賓) to whom the people usually pray for prescriptions in case of sickness. His transformation into a fairy is interesting and serves as an illustration of the origin of such fables. A scholar of the second degree, equivalent to a western master of arts, he lived about the eighth century A.D. Whilst on the way to the Capital to attend the competitive examinations, with mind bent on fame and success, he fell in with a fairy named Chung Li (鍾離) who appeared to him as a servant of the inn where he stayed. The weary and hungry scholar, while waiting for his food, soon fell asleep. In his dreams he saw himself carrying off the palm in the examinations, made a mandarin, and advanced from one important office to another till he attained the post of prime minister in the kingdom of Hua Su. He was dreaming of being extremely happy, surrounded by numerous friends and children on the joyful anniversary of his birthday, when suddenly he awoke and saw the disguised servant preparing his rice beside him. The latter spoke to him thus: "Before the yellow rice is cooked you have already visited Hua Su in your dreams." Lü gasped with astonishment and the fairy continued: "Don't be disappointed to find that what you have seen is only a dream; the reality is nothing more. Even if all you witnessed comes true, when it is over—what is it but an empty dream?" Lü Tung-pin was so

(120) For further information on this subject, see Dudgeon: *Chinese Arts of Healing*, Chinese Recorder 1868; K. C. Wong: *Chinese Medical Superstitions*, National Medical Journal of China, Vol. 2, Dec. 1916 and Vol. 3, March 1917; Doré: *Researches into Chinese Superstitions*, Vol. 2, 1916.

struck with the truth of these words that he at once renounced all worldly pursuits for the cultivation of virtue and became one of the genii.

According to Mayers, he was born in 755 A.D. and was one of the most prominent among the later patriarchs of the Taoist sect. While holding office as magistrate of the district of Teh-hua, he encountered Chung Li in the recesses of Lu Shan and was initiated into the mysteries of alchemy and the elixir of life. He was preliminarily exposed to a series of temptations—ten in number—all of which he successfully overcame. Thereupon he was invested with the formulas of magic and a sword of supernatural power, with which he traversed the Empire, slaying dragons and ridding the earth of divers kinds of evil, during a period of upwards of four hundred years. In the twelfth century, temples were erected in his honour, and were dedicated to his worship under the designation of "Ch'un Yang" (純陽). He is also called Lü Tsu (呂祖) or the Patriarch Lü, under which designation he is for some obscure reason worshipped by the fraternity of barbers(121).

(121) Mayers, *Chinese Reader's Manual*, p. 157.

CHAPTER XII

STANDARD WORKS OF THE HISTORICAL PERIOD

The medical literature of China is very voluminous and dates from the most remote periods. It is claimed that some of the books were written as far back as 3,000 years before the Christian era which, however, is wanting in proof(122). Chinese writing was not invented until the time of Huang Ti, who ordered his servant Ts'ang Chieh (倉頡) to make words in the form of imitative symbols. These were done in lacquer upon strips of bamboo or palm leaves. It is said that the vertical arrangement of characters was adopted because it is much easier to write up and down a bamboo than around it. Paper and pen came into existence much later. Many characters were elaborated. The symbols devised represented pieces of string of different lengths with knots at various places in their course. Those consisting of a single knot with a small piece of string attached have suggested the name of "tadpole character" for this writing. These characters soon became profoundly modified.

A considerable change was also made about the beginning of the Ch'in dynasty 225 B.C., when Li Szu (李斯) greatly improved the forms of the characters and divided them into *Ta Chuan* (大篆) and *Hsiao Chuan* (小篆). *Hsiao Chuan* was subsequently changed to *Ch'in Chuan* (秦篆). A little later Ch'êng Mo (程邈) devised a script called *Li Shu* (隸書) or plain square writing, which the first Chin emperor observed and ordered to be used throughout his empire. Paper was first manufactured at this time by Wang Lun (王倫).

In the Han dynasty 206 B.C., writing was further improved by Chia Fang (賈紡), San Ts'ang (三倉), Ts'ai Yung (蔡邕), and Shih Ching (石經) who wrote the *Han Li* (漢隸). In the Chin dynasty, 265 A.D., Chung Yu (鍾繇) and Wang Hsi-chih (王羲之)

(122) According to one compiler the number of known books is estimated at about 1,600 sets, comprising about 12,600 volumes. The *Imperial Catalogue* only mentions 190 sets consisting of 2,424 volumes. These, however, are all standard works brought down to the beginning of the Ch'ing dynasty, the numerous popular works not being included. K. C. Wong: *Chinese Medical Literature*, China Medical Journal, March, 1918.

changed the writing into a style more nearly approaching that of the present day (123).

With the slow process of development of Chinese writing and the clumsy way in which it was performed, it is natural that the production of books was very precarious. It was only after the invention of pen, paper and, most important of all, printing, that books began to multiply. The following is a list of standard works up to the close of the T'ang dynasty (124):

Shen Nung Pen Ts'ao (神農本草) or the *Herbal*, 3 volumes popularly ascribed to Shen Nung, a mythical emperor who reigned in 2838—2698 B.C., is a book written about the 1st century B.C. and containing descriptions of 365 kinds of herbs. Though generally considered as one of the classics it has very little scientific value.

Huang Ti Nei Ching (黃帝內經) or the *Internal Classic* is the most important work on Chinese medicine. It is made up of two separate books: the first *Su Wen* dealing mostly with physiology and pathology, the second *Ling Shu* treating of anatomy and acupuncture. The book is in the form of a catechism. Nothing definite is known of the author or the date of its publication. It was probably written about 1000 B.C.

Nan Ching (難經) or *Difficult Classic* by Pien Ch'iao of the Chou dynasty, 2 volumes. This little treatise consists of explanations or annotations of 81 difficult passages selected from the *Nei Ching*. No mention of it is found in the *Annals of Art* of the Han dynasty. The *Sui and T'ang Annals* state that the book was composed by Pien Ch'iao and that a commentary on it was written by Lü Kuang (呂廣), the court physician. It may be inferred from this that the book was published before the period of the 'Three Kingdoms.' Numerous commentaries have been written upon it, most of which are now lost. The best edition extant is one by Hua Shou (滑壽) of the Yuan dynasty, entitled *Nan Ching Pen I* (難經本義). In the Ming dynasty, during the reign of Ching Tê 1506-1521 A.D., Chang Shih-hsien (張世賢) published an edition containing diagrams and annotations which has remained popular to this day. Dr. Hübotter has translated the *Nan Ching* into German.

A famous classic which ranks with the *Nei Ching* in importance is the *Shang Han Lun* (傷寒論) or *Essay on Typhoid*. It was com-

(123) The above description is taken from E. T. Hsieh's: *A Review of Chinese Anatomy*, Anatomical Record, 1921.

(124) Wylie's *Notes on Chinese Literature*, Chap. Medical writers, p. 95; and Henderson's paper, *The Medicine and Medical Practice of the Chinese*, in the *Journal of the Royal Asiatic Society*, Dec. 1864, contain a long list of Chinese medical books.

posed by Chang Chung-ching, the "sage" of medicine, and was published in 217 A.D. The original having been lost, what is handed down to the present time is a compilation by Wang Shu-ho, the great authority on the pulse, who flourished about 265-317 A.D. The work consists of 10 volumes and does not, as the name implies, deal with typhoid fever alone but with other diseases as well. There are 22 essays, 397 rules of treatment, and 113 prescriptions, excluding duplications. So highly is this treatise esteemed by the profession that more than a hundred commentaries and annotations have been written upon it during the different dynasties. The edition by Ch'eng Wu-i (成無已) is generally regarded as the best.

Another great work by the same author is the *Chin K'uei Yao Lüeh* (金匱要略) or *Synopsis of the Golden Chamber*, which is a small book of 3 volumes dealing with miscellaneous diseases. Though also considered a classic it is less famous than the Essay on Typhoid. Hsü Pin's (徐彬) commentary on the work published in 1671 A.D. is included in the famous *Four Literary Treasuries* (四庫全書).

The *Chia I Ching* (甲乙經) was written by Huang-fu Mi (皇甫謐) between 215-282 A.D. The *Sui Annals* wrongly ascribed it to Huang Ti. The book consists of 12 volumes and is divided into 123 chapters. It is a special treatise on acupuncture and moxa and throws many sidelights on ancient ideas of anatomy.

The *Chou Hou Pei Chi Fang* (肘後備急方) or *Prescriptions for Emergencies*, by the famous Taoist Ko Hung 281-361 A.D., is a book in 8 volumes dealing with therapeutics. T'ao Hung-ching (陶弘景) of the Liang dynasty made up the number of prescriptions to 101 and altered the name to *101 Formularies* (百一方). The material is classified under 51 headings. With a view to augmenting its practical usefulness as a handy reference book, only the most common remedies are included. The book, among other things, contains an authentic description of smallpox—perhaps the earliest account on record (125). Being an ardent Taoist Ko Hung devoted much time to experimenting with the elixir of life. He retired into the Lo Fou mountains in Kwangtung at the age of 81 to continue

(125) Vol. 2, p. 24. A translation of the passage is as follows:

Recently there have been persons suffering from epidemic sores which attack the head, face and trunk. In a short time these sores spread all over the body. They have the appearance of hot boils containing some white matter. While some of these pustules are drying up a fresh crop appears. If not treated early the patients usually die. Those who recover are disfigured with purplish scars which do not fade until after a year. This is due to poisonous air. The people say that it was introduced in the reign of Chien Wu when that King was fighting with the Huns at Nang Yang. The name of 'Hun pox' has been given to it.

the pursuit of his studies(126). Under the pseudonym of Pao P'o-tzu (抱朴子) he wrote the *Lives of the Immortals* (神仙傳) and several other philosophical works(127).

About 265-317 A.D. a celebrated treatise on the pulse, entitled *Mo Ching* (脈經) or the *Pulse Classic*, was published by Wang Shu-hê (王叔和), the court physician during the Western Chin dynasty. The work consists of 10 volumes and is a summary of all the traditional methods and knowledge of this subject together with his own observations. A spurious production, called *Mo Chieh* (脈訣) or the *Secret of the Pulse* which appeared at about the period of the Five Dynasties 907-960 A.D. has often been mistaken for the genuine treatise of Wang Shu-hê. Under this wrong impression Hervieu, a French missionary, translated the greater part of it into French in 1735 and Du Halde also included it in his *Description géographique, historique, chronologique, politique de l'Empire de la Chine*. Brookes re-translated it into English in 1736. Chang Shih-hsien of the Mings, failing also to discover the mistake, wrote an illustrated commentary on it entitled *T'u Chu Mo Chieh* (圖註脈訣), in which form it has been in common circulation down to the present time. Reprints of the original classic still exist though rather scarce. As Chinese doctors lay great stress on the pulse, the *Mo Ching* is regarded as one of the standard works on medicine.

In the ancient *Pen Ts'ao* of Shen Nung only 365 kinds of drugs were enumerated. T'ao Hung-ching (陶弘景) of the Liang dynasty 502 A.D. enlarged the edition with 365 additions from the common prescriptions of the Han Wei period, and compiled the *Ming I Pieh Lu* (名醫別錄) or *Formulas of Famous Physicians*. He submitted the manuscript to the Emperor who ordered it to be published. This may be said to be the first official pharmacopoeia of China. T'ao was also a noted Taoist and died at the ripe age of 85.

In 610 A.D. there was published a famous work on pathology, *Ch'ao Shih Chu Pin Yüan Hou Tsung Lun* (巢氏諸病源候總論) popularly known as *Ch'ao Shih Pin Yüan* (巢氏病源). It was compiled under Imperial orders by a committee of doctors with Ch'ao Yüan-fang (巢元方) at the head. The book is in 50 volumes and is divided into 67 headings with 1720 chapters. In the Sung dynasty it was used as a textbook for state medical examinations(128). We do not know much of the life of Ch'ao Yüan-fang except that during the reign of Tah Yeh he was a doctor of medicine in the Imperial Medical Academy(129).

(126) 晉書本傳 *Chin Shu Pen Chuan*.

(127) 古今醫統 *Ku Chin I T'ung*.

(128) 讀書記 *Tu Shu Chi*, Readers' Manual.

(129) 古今醫統 *Ku Chin I T'ung*.

The *Ch'ien Chin Yao Fang* (千金方要) or the *Thousand Gold Remedies* is a general encyclopedia of medicine in 30 volumes, compiled by Sun Szu-mo of the T'ang dynasty. In addition to ordinary drug treatment a host of other measures such as acupuncture, moxa, massage, dieting, physical culture, fasting, and even love philters are enumerated. There is also a supplement of 30 volumes called *Ch'ien Chin I Fang* (千金翼方) in which are several chapters of incantations and exorcising magic. It appears that in his earlier days Sun Szu-mo was not aware of the existence of Chang Chung-ching's famous classic on typhoid for no reference to it is found in the first work. However, in the supplement, which was written 30 years later, there are two volumes given to this subject. Sun Szu-mo being an eminent Taoist, his medical writings were greatly influenced by his religious teachings. He has been immortalized as one of the deities with the name of Sun Chen-jen (孫真人), and worshipped in the North as the King of Remedies (藥王). He died in 682 A.D.(130).

A small treatise of 2 volumes on eye complaints entitled *Yin Hai Ching Wei* (銀海精微) is also attributed to Sun Szu-mo. But the *Annals of Art* of the T'ang and Sui dynasties do not mention this work, nor is any reference made in the list of books in *Sun's Biography*. Evidently it is a production of the Sung period. Being the first monograph on the subject it is regarded as a standard work.

Another famous work on medicine of the cyclopaedic type is the *Wai T'ai Pi Yao* (外臺秘要) or *Medical Secrets of an Official* by Wang Tao (王忞). It consists of 40 volumes and was published in 752 A.D. The material is classified under 1140 chapters. Each chapter begins with the description of a disease, mostly taken from *Ch'ao's Pathology*, followed by numerous recipes from various authors. Many formulas for demoniacal possessions, cat devils and other peculiar affections are found scattered among its pages. It may be noted that acupuncture was purposely omitted on the ground that the art had been lost and the technique was difficult and dangerous. Wang was not a doctor by profession. He learned medicine partly through nursing his own mother who was a confirmed invalid and partly from his medical friends. Being of a diligent bent of mind he spent most of his spare time at the Hung Wen Library where there was a good collection of books. *Wai T'ai Pi Yao* was a result of this untiring

(130) For further information about the myths that surround this famous physician see E.T.C. Werner's: *A Dictionary of Chinese Mythology*, art. Yao Wang.

research(131). This work contains, among other things, a very detailed account of infectious diseases under the name *t'ien hang* (天行). Typhoid, sore throat, bronchitis, eruptive fever, smallpox, dysentery, jaundice, malaria, cholera, etc., were listed under the above category, occupying the first six volumes of the book. The following table of contents will give an idea of the arrangement and subjects treated in the later volumes.

- Vol. 7, 8. Stomach Troubles.
- " 9, 10, 13. Lung Troubles.
- " 11. Diabetes.
- " 12. Gastro-intestinal Diseases.
- " 14. Apoplexy.
- " 15. Delirium.
- " 16, 17. Tuberculosis.
- " 18, 19. Beri-beri.
- " 20. Water Diseases.
- " 21. Eye Affections.
- " 22, 23. Diseases of the Eye, Nose, Mouth, Throat and Teeth.
- " 24, 29, 40. Surgical Diseases.
- " 25, 26. Dysentery and Intestinal Parasites.
- " 27. Gonorrhoea, Constipation and Urinary Affections.
- " 28. Sudden Deaths: Hanging, Drowning, Syncope, Cat-devils, etc.
- " 30. Leprosy.
- " 31. Herb Gathering, Miscellaneous Recipes, Poisoning.
- " 32. Beauty Recipes.
- " 33, 34. Women's Diseases.
- " 35, 36. Children's Sickness.
- " 37, 38. Elixir of Life.
- " 39. Moxa.

The *Ch'ien Chin Fang* and the *Wai Tai Pi Yao* are two outstanding works of the T'ang dynasty. They are a consummation of the medical teachings and methods of treatment up to that time. Though comprehensive in scope they lack judicious selection. Many things touching the supernatural are included which, strictly speaking, are outside the realm of practical therapeutics. On the other hand, much valuable information for the study of folklore and history are thus preserved among this mass of irrelevant matter. From this we may also obtain a glimpse of the current views and ideas regarding medicine which, otherwise, would have been lost to posterity.

(131) 新唐書王珪傳 *New T'ang Annals*.

CHAPTER XIII

THE PERIOD OF INTENSIVE SPECIALISM

As has been pointed out, the Chinese have a great reverence for authority. What the ancients say is regarded as final and above question. This veneration for traditions, amounting almost to worship, is the chief cause of the scarcity of original writings and the petrified fixedness of Chinese medicine. At the beginning of the Sung dynasty a marked change took place. The practice of medicine became more intensive and specialized. Monographs on particular diseases began to appear. The number and variety of publications in this dynasty, many of them quite original, exceed that of all the previous dynasties put together.

Thus in internal medicine the works of P'ang An-shih (龐安時),⁴ Chu Hung (朱肱), Hsü Shu-wei (許叔微), Han Chih-he (韓祇和),⁴ and others threw a good deal of light on the study of typhoid and other fevers. In pathology the *San Yin Chi I Fang* (三因極一方) by Ch'en Yen (陳言) introduced a new classification of the etiology of diseases. The causes were grouped under three main headings, namely, internal causes, external causes, and those which belong to neither. By internal causes was meant disturbance of the seven emotions—joy, anger, grief, fear, love, hatred, and desire—which affect the physical health. External causes signified the harmful results from the six influences—wind, heat, moisture, fire, and cold. Hunger, overfeeding, loss of voice through shouting, bites and stings of animals and insects, wounds, drowning, etc. belonged to the third category. In therapeutics there are Wang K'uang's (王貺) *Ch'uan Sheng Chih Mi* (全生指迷), Yen Yung-he's (嚴用和) *Chi Sheng Fang* (濟生方), Wu Yen-k'uei's (吳彥蕤) *Ch'uan Hsin Shih Yung Fang* (傳信適用方), Tung Chi's (董汲) *Lü She Pei Yao Fang* (旅舍備要方), Hsu Shu-wei's (許叔微) *Lei Chêng P'u Chi Pen Shih Fang* (類證普濟本事方), Hsia Tê's (夏德) *Wei Sheng Shih Ch'üan Fang* (衛生十全方) and Shên Kuo's (沈括) *Su Shên Liang Fang* (蘇沈良方). The last named is a collection of useful recipes by Shên Kuo with some additional material by Su Tung-po, the well known poet; hence the combination of the two names in the title.

Obstetrics and gynaecology seem to have received some attention during this period as evidenced by the appearance of many works on this subject. The first monograph is the *Ch'an Pao* (產寶) by Kao

Yin (咎殷) of the T'ang dynasty, of which, however, only a fragment remains in the *Great Encyclopaedia of Yung Lo* (永樂大典). Another treatise on obstetrics is Li Shih-sheng's (李詩聖) *Ch'an Yü Pao Ch'ing Fang* (產育寶慶方), a little work of 2 volumes which is also included in the great encyclopaedia above mentioned. But the chief work on gynaecology is the *Fu Jen Liang Fang* (婦人良方) in 24 volumes, published in 1237 A.D. and written by Chen Tzu-ming (陳自明), a professor of Ming Tao College at Chien Kang prefecture. It consists of upwards of 260 articles arranged under eight divisions, dealing with various diseases and their respective prescriptions. Wang Kên-t'ang (王肯堂) incorporated the entire work as the section on female complaints in his *System of Medicine*.

The earliest special treatise on children's diseases is the *Lu Hsin Ching* (顱顱經) or the *Fontanel*, an anonymous work of 2 volumes, written about the end of the T'ang or the beginning of the Sung dynasty. It is said that the success of Ch'ien I (錢乙), the famous specialist on diseases of children, was due to a thorough mastery of this book (132). Many other productions on this subject are mentioned in current literature but unfortunately most of them are no longer extant. The following is a list of them:

Hsiao Er Wei Sheng Tsung Wei Lun Fang (小兒衛生總微論方)
Hsiao Er Pin Fang (小兒病方)
Ying Er Pao Ching (嬰兒寶鏡)
Hsiao Er Ling Pi Fang (小兒靈秘方)
Hsiao Er Ch'ih Ch'ieh (小兒至訣)
Hsiao Er I Fang Miao Hsüan (小兒醫方妙選)
Hsiao Er Pan Chen Lun (小兒癰疹論)

Surgery is represented by Tung Hsüan Chü Shih's (東軒居士) *Wei Chi Pao Shu* (衛濟寶書), Li Hsin's (李迅) *Chi Yen Pei Chu Fang* (集驗背疽方) on carbuncles, and Wang Wei-tê's (王惟德) *Tung Jen Chen Chiu Ching* (銅人鍼灸經) on acupuncture and moxa. The art of acupuncture was known in China from the remotest antiquity, although it was not until the Sung dynasty that the first practical handbook on the subject was published. In 1027 A.D. the Emperor had two copper anatomical figures of the human body made to illustrate the practice. One model was placed in the Imperial Academy of Medicine at Peking and the other in the Jin Chi Palace (133). The figures were pierced with holes at the proper places for puncturing. A coating of yellow wax was painted on the surface while the interior was filled with water. The student was

(132) 李濟醫史 *Li Lien's Medical History* cites many illustrative cases of Ch'ien I's skill in this branch of medicine, the patients being mostly from royal families.

(133) 齊東野語 *Ch'e Tung Yeh Yü*

required to practise needling the spot where there was a hidden hole(134).

A monumental work is the *Shêng Chi Tsung Lu* (聖濟總錄) or *Imperial Encyclopaedia of Medicine* which consists of 200 volumes. It was compiled by a staff of physicians under imperial orders, and was published about 1111 A.D. It covers every branch of the healing art, ranging from medical astrology, emotional pathology to acupuncture, charms, dieting, and the elixir of life. This great work was reprinted in 1300 A.D. In course of time, however, the copies became scarce until in the Ming dynasty only a few volumes of the work were in existence. During the Ch'ing dynasty many attempts were made to recover the missing portions with but partial success. The famous *Four Literary Treasuries* contain a summary in 26 volumes.

The Sung Emperors appeared to take considerable interest in materia medica, for several editions of the *Pents'ao* (本草) were put forth during this dynasty. In 973 A.D. Emperor Tai Tsu ordered Liu Han and others to print the *K'ai Pao Pen Ts'ao* (開寶本草). In 1057 A.D. Jen Tsung commanded the court physicians to revise and annotate the old materia medica, resulting in the publication of the *Chia Yu Pu Chu Pen-Ts'ao* (嘉祐補註本草). A few years later the Emperor, in order to make it more complete, issued a decree instructing that the herbs enumerated be illustrated with pictures. The result was the compilation of the *T'u Ching Pen-Ts'ao* (圖經本草) or *Illustrated Pen Ts'ao*. Another important contribution is T'ang Shen-wei's (唐慎微) *Chêng Lei Pen-Ts'ao* (證類本草) in 31 volumes, combining all the chief items of the previous works together with much new material.

Besides the list of publications mentioned above, which are more or less on general medicine, there are still others which deal with the rarer subjects. Two books on hygiene are recorded. The earliest treatise is Ch'en Chih's (陳直) *Yang Lao Feng Ch'in Shu* (養老奉親書) or *Care of the Aged*, a little pamphlet dealing with the care and feeding of old people. Tsou Hung (鄒銓) of the Yuan dynasty added three more volumes to it and altered the name to *Shou Ch'in Yang Lao Hsin Shu* (壽親養老新書). The other book called *Yang Sheng Pi Yung* (養生必用) by Ch'i Yu-shih (祁虞世) is unimportant.

An interesting monograph is Tung Chi's (董汲) *Chiao Ch'i Chih Fa Tsung Yao* (腳氣治法總要) or *Treatment of Beri-beri*, published about 1078 A.D. This disease was mentioned in the *Nei Ching* under the name of "ch'üeh chi" (厥疾). The present term "chiao ch'i"

(134) Dr. Wu Lien-teh in *College of Imperial Physicians in Peking*, National Medical Journal, Vol. 5, No. 1, says the original was removed by the foreign troops during the Boxer times and the one now seen is comparatively new.

(脚氣) was first employed in the T'ang dynasty and has remained in vogue ever since. The book is divided into two parts—the first containing 12 essays on the etiology and pathology of beri-beri, the second giving 46 recipes for its treatment. This is the first and only monograph on this subject.

The *I Shuo* (醫說) by Chang Kuo (張果), in 10 volumes, is a sort of medical miscellany. It contains much that is useful and of interest.

The *Tai I Chu Ch'eng Wen* (太醫局程文) or *Model Essays of the Imperial Medical College* is a collection of examination papers. When and by whom the original work was compiled is not known. It may be gathered from this that in the Sung dynasty state medical examinations were held regularly and that emphasis was laid upon medical education. The work is in 9 volumes and is still obtainable in the market.

CHAPTER XIV

LEADING PHYSICIANS OF THE SUNG DYNASTY

Ch'ien I (錢乙字仲陽) hailed originally from Ch'ien T'ang, Chekiang. His ancestors moved north and settled at Yun Chow. His mother died early. When he was three years old his father, a skilful acupuncturist but very fond of wine and travel, left home and refused to return. His aunt took pity on him and adopted him as her son. As he grew up he was taught the rudiments of medicine. Just before his aunt's death he was told of his true antecedents. He wept and asked permission immediately to search for his father. It was not until he was thirty years old and after eight or nine attempts that he succeeded in persuading the latter to return to his own place. The villagers greatly admired his filial piety and wrote many poems to commemorate the event.

Ch'ien specialized in children's complaints and was known all over Shantung. During the reign of Yuen Feng (1078-1085) he was awarded a Han Lin degree for attending a princess with good results. The following year he was promoted court physician for curing the prince of hydrophobia with a dose of 'huang t'u-t'ang' (黃土湯). Thereafter his service was frequently sought by the royal families and ministers (135). In constitution he was weak and thin; by nature he was simple. But he loved the cup so much that eventually its ill effects were noticed. One day he sighed and suddenly made up his mind to fight for his health. He prepared some medicine and for days and nights continued the treatment. After a month he succeeded in getting the paralysis under control, only the left hand and leg were contracted. He then retired to live in the country and whiled away his time reading histories and novels. Patients came from near and far but he always gave them medicine. Li Lien's *Medical History* cited a long series of his clinical cases many of which were of the most extraordinary nature. His prognosis was so accurate that it excited the admiration of the people. He was a great physician as well as a children's specialist. His learning was not confined to one particular school. He had also a profound knowledge of materia medica for he could tell the properties of any herb that was brought to him for identification. In his declining years, owing to lack of control in wine and food the paralysis

(135) 宋史方技傳 *Sung Shih Fang Chi Chuan*.

gradually got the ascendancy. Realizing that death was near he called his relatives together to say farewell. He waited for the end fully dressed. Author of *Hsiao Er Yao Chêng Chih Chüeh* (小兒藥證直訣) 3 volumes, *Shang Han Chih Wei* (傷寒指微) 5 volumes and the *Ying Hai Lun* (嬰孩論), he died at the age of 82. He is generally acknowledged as the greatest pediatricist of China.

P'ang An-shih (龐安時字安常), a celebrated doctor of the reign of Shen Tsung (1068-1085), was a native of Ch'i Chow. When a child he could remember all he read. In his youth he took great interest in sports such as cock fighting, dog racing, ball games, chess and music(136). His father was also a physician and taught him the secrets of the profession. Not content with this limited knowledge he devoted himself to the writings of Huang Ti and Pien Ch'iao and mastered them all in a short time to the surprise of his father. He was then still in his teens. Later he became deaf. In spite of this handicap he delved deeper into the mysteries of the ancients and was particularly proficient in the specific fevers. He built houses to accommodate the sick who came to him, personally supervising the food and medicine until they recovered. If a case was incurable he would not temporize but would allow the truth to be known. When grateful patients offered him a fee he only accepted a portion of it(137). On the other hand, his own expenses were rather reckless. In attending out-calls, he often engaged four boats, one for singing girls, one for cooks and servants, one for companions and one for divers uses. Such were his indulgences that he was soon reduced to bankruptcy(138).

At the age of 58 he contracted an illness. His pupils requested him to feel his own pulse. He smiled and told them that he had duly done so but found the indications fatal. He refused to take any medicine. A few days later he died while seated talking with a friend. He wrote the *Nan Ching Pien* (難經辨), *Chu Tui Chi* (主對集) and the *Shang Han Tsung Ping Lun* (傷寒總病論), 6 volumes. He was an intimate friend of Su Tung-po, the famous poet, and held frequent correspondence with him. To the last volume of this work is appended one of his letters to the bard.

Ch'en Yen (陳言字無擇) is the noted author of the *San Yin Chi I Fang* already referred to, which contains a new classification of the etiology of diseases. He specialized in pathology and being a good diagnostician he could often predict the time of death with precision. The *San Yin Chi I Fang* is a work of 18 volumes, published in 1174 A.D.

(136) 宋史醫史 Li Lien: *Medical History*.

(137) 宋史本傳 Sung *History*.

(138) 書齋 Shu Chiao.

Hsü Shu-wei (許叔微字知可) was a doctor of literature. Some say he was a native of Yang Chow but others credit him to Kuan Ling. His parents died when he was only eleven years old. The *Topography of Wu Chin* (139) gives a strange story telling how he took up medicine as a profession. Having failed repeatedly in the provincial competitive examinations, and while on his way home in a boat, he dreamt of a man clad in white who thus spoke to him, "You failed in the examination because you have no secret virtues." Hsü asked "I am so poor, what have I to give to others?" The white figure replied "Why not be a doctor? I can help you." Hsü returned home, studied medicine, and gave free treatment to rich and poor alike. Thousands were benefited by his charity. When he sat for the next examination he came out sixth on the list. In his advanced years he arranged his clinical notes, putting in his favourite recipes, and compiled the *Lei Chêng P'u Chi Pen Shih Fang* (類證普濟本事方) in 10 volumes. Other works by him are: *Shang Han Ko* (傷寒歌) 2 volumes, *I Shang Han Lun* (翼傷寒論) 2 volumes, and *Pien Lei* (辨類) 5 volumes.

The first compiler of a textbook on women's diseases was Chen Tzu-ming (陳自明字良甫), a native of Chien Kang. His monograph, the *Fu Jen Liang Fang* (婦人良方) or *Textbook of Diseases of Women* is the earliest treatise of its kind on record. He came from a line of medical men, three generations before him being of this profession. Possessing a good library of medical books and travelling widely in the pursuit of knowledge he was specially fitted for this task. He flourished under the reign of Chia Hsi 1237-1240 A.D. and was one time court physician (140).

Yen Yung-he (嚴用和字子禮), according to his own account, began to read medical books at the early age of eight, studied under Liu Fu-chêng at twelve, and completed his course at seventeen. After thirty years of practice he composed the *Chi Sheng Fang* (濟生方) which embodied all his experiences. This work consists of 8 volumes and contains 80 essays and 400 prescriptions. It is said that he based it on Chen Yen's *San Yin Chi I Fang*. He was a careful practitioner, using only remedies of recognized value. In later years he wrote a supplement to his earlier collection.

Two other names, Tang Shen-wei and Su Sung, may be included in this list, not because of their fame as physicians but because of their contributions to materia medica. Tang Shen-wei (唐慎微字審元) *alias* Shen-yüan came from a long line of medical ancestors. He was the most skilful of them and was specially proficient in therapeutics. Between 1086-1093 he lived at Chengtu where he con-

(139) 武進縣志 *Wu Chin Hsien Chih*.

(140) 婦人良方自序 *Preface to Textbook of Diseases of Women*.

ducted a clinic with success. As he did not charge anything for his services but only asked for secret remedies in return he was greatly loved by the people. He diligently searched the literature for effective drugs and prescriptions, copied them down in his note book, and in course of time accumulated such a wealth of material as to form the *Cheng Lei Pen-Ts'ao* in 31 volumes. In 1108 he submitted this treatise to the Emperor Hue Tsung who changed the title to *Ta Kuan Pen-Ts'ao* (大觀本草)

Su Sung, also named Tzu-yung (蘇頌字子容), was not a doctor but an official. He was a native of Chuan Chow but had his home at Tan Yang. Graduated Doctor of Literature in the reign of Yen Tsung (1023-1063) he became prime minister during the time of Chih Tsung (1086-1100). He compiled the *Tu Ching Pen-Ts'ao* (圖經本草) or *Illustrated Herbal* in 21 volumes. The pictures were collected from different provinces by the order of the Emperor. He died in the first year of Ching Kuo, A.D. 1101, aged 82(141).

CHAPTER XV

MEDICAL SCHOOLS AND STATE EXAMINATIONS

State medical examinations may be said to date as early as the tenth century B.C. The *Chou Rituals* state that "at the end of the year the work of the doctors is examined and the salary of each fixed according to the results shown. If the statistics show that out of ten cases treated all get well every satisfaction may be felt. If, however, one out of ten dies, the results may be regarded as good; if two out of ten die, the results are only fair; if three out of ten die, they are poor; if four out of ten, they are bad" (142).

In the T'ang dynasty there was no material change, the grading also depending on the percentage of successful cures (143). But in the Sung dynasty, with the establishment of proper medical schools, these examinations were conducted on a more extensive scale nearly approaching that of the official literary competitive examinations.

As already referred to, medical education was first started in the T'ang dynasty. It was, however, mostly confined to the Imperial College, whose main function was to administer to the needs of the Emperor rather than to train up men for the profession. In the Sung dynasty regular schools were organized (144), first in the capital and later in other parts of the country. A brief history of their development is as follows: In 1076 A.D. an Imperial Medical College was founded. In the beginning it was put under the T'ai Ch'ang Szu (太常寺) but later transferred to the Kuo Tzu Chien (國子監). Three hundred students were enrolled with a staff of medical officers to teach them the three branches of medicine, namely, medicine, surgery and acupuncture (145). In 1163 A.D. these teachers were retrenched or transferred and the students discharged. Three years later the college was abolished: but it was re-established in 1191 A.D. with one hundred students.

The following textbooks were used. Medicine: *Su Wen* or *Canon of Medicine*, *Difficult Passages*, *The Pulse*, *Ch'ao's Pathology*, *Essay of the Dragon Tree*, and the *Supplement to The Thousand Gold Remedies*. Surgery and Acupuncture: the books just mentioned,

(142) 周禮天官 *Chou Li T'ien Kuan*, *Chou Rituals*, Chapter Tien Kuan.

(143) 舊唐書職官志 *Official Repertory*, Chap. Medical Officials, *T'ang Annals*.

(144) 宋史職官志 *Official Repertory*, *Sung History*.

(145) 宋史選舉志 *Sung History*.

except that *The Pulse* was omitted, and *Acupuncture and Moxa*, three volumes, added (146).

Each candidate was examined in the theory of the subject, orally and clinically. In the first examination an essay was required the subject matter of which was taken from the *Canon of Medicine*. The candidates were expected to possess a knowledge of the structure of the human body, the functions of the various organs, the nature and causes of diseases, the different methods of treatment such as the use of antipyretics, emetics, purgatives, diuretics, and tonics. In the oral examination the questions were from Shen Nung's *Materia Medica*, *Typhoid Fever*, and *The Golden Chamber*. The action of drugs, prescription writing, the modes of infection and causes of disease were required to be known. For the clinical examination the candidate had to demonstrate the results of his treatment of the patients under his care and state his reasons for adopting the measures employed.

The examination questions were six in number, there being one question on each of the following subjects: principles of medicine and surgery, physiology and anatomy, differential diagnosis by the pulse, prescriptions and therapeutics, clinical medicine and surgery, influence of the air and stars. The candidates were then classified into grades. The best ones were given official appointments or ordered to compile and write medical books, or engaged as teachers. The second grade were given a license to practise. Those who were not satisfactory were required to study again; while those who failed were ordered to change their profession.

According to another account, the branches of medicine numbered nine and the students were assigned to the different classes in the following proportions: Diseases of adults, 120 persons; diseases of the wind, 80; diseases of children, 20; diseases of the eye, 20; swellings and fractures, 20; midwifery, 20; mouth, teeth and throat, 10; acupuncture and moxa, 10; wounds and faith healing, 10. The textbooks used were: *Su Wen*, *Nan Ching*, *Shang Han Lun*, *Chao Shih Pin Yuan*, and *T'ai P'ing Sheng Hui Fang* (147).

Officers, teachers, and other medical staff were appointed to the prefectures and districts, the number varying according to the size and importance of the places. These positions were often filled by men selected by competitive examinations. Thus it appears that the medical service of this period was quite well organized. The T'ai I Yüan (太醫院) had special charge of medical education, the Han Lin I Kuan Yüan (翰林醫官院) of general administration, and

(146) In the *Elements of Medicine*, the list of books recommended for medicine is slightly different. *Essay of the Dragon Tree* is not mentioned, while *Typhoid Fever* and *The Golden Chamber* are included.

(147) 宋史 *Sung History*.

the Yü Yao Yüan (御藥院) of the medical needs of the Imperial household(148).

Very few changes were made in subsequent years, but gradually the schools declined and then ceased to exist until the third year of Chung T'un 1262 A.D., when they were revived by Imperial decrees. In the *Institutes of the Yuan Dynasty* there is a more detailed account of these schools(149). The following were some of the principal features:

Course of Study.—Ten subjects were taught covering the diseases of adults or general medicine, diseases of children, diseases due to wind, obstetrics, which included diseases of women; diseases of the eye, mouth, teeth, and throat, fractures and wounds, swellings and sores, acupuncture and moxa, charms and incantations.

The following textbooks were recommended:—

1. Diseases of Adults—*Su Wen, Difficult Passages*, Shen Nung's *Materia Medica, Typhoid Fever*, and the *Imper. Cycl. of Med.* Vol. Lxxxiii cc. 20-100, 186-187.
2. Children's Diseases—*Su Wen, Difficult Passages*, Shen Nung's *Materia Medica, Imper. Cycl. Med.*, Vol. xvi, cc. 167-182.
3. Diseases Due To Wind—*Su Wen, Difficult Passages*, Shen Nung's *Materia Medica, Imper. Cycl. Med.*, Vol. xvi, cc. 5-20.
4. Obstetrics and Women's Diseases—*Su Wen, Difficult Passages*, Shen Nung's *Materia Medica, Imper. Cycl. Med.*, Vol. xvi, cc. 105-116.
5. Eye Diseases—*Su Wen, Difficult Passages*, Shen Nung's *Materia Medica, Imper. Cycl. Med.*, Vol. xlii, cc. 102-112.
6. Diseases of Mouth, Teeth, and Throat—*Su Wen, Difficult Passages*, Shen Nung's *Materia Medica, Imper. Cycl. Med.*, Vol. xlii, cc. 114-116.
7. Fractures and Wounds—*Su Wen, Difficult Passages*, Shen Nung's *Materia Medica, Imper. Cycl. Med.*, Vol. iv, cc. 129-145.
8. Swellings and Sores—*Su Wen, Difficult Passages*, Shen Nung's *Materia Medica, Imper. Cycl. Med.*, Vol. xxi, cc. 114-116, 125-128, 141-142, and c. 200.
9. Acupuncture and Moxa—*Su Wen, Difficult Passages*, Shen Nung's *Materia Medica, Imper. Cycl. Med.*, Vol. iv, cc. 191-194.
10. Charms and Incantations—*Su Wen, Supplement to The Thousand Gold Remedies*, Vol. ii; *Imper. Cycl. Med.*, Vol. iii, cc. 195-197.

Discipline.—The teachers were held responsible for the progress of the students. In the ninth year of Ta Tê 1305 A.D. two decrees for the punishment of the staff in case of incompetence or failure of duty were issued:—

(a) If the teacher did not compel the students to attend school regularly he was fined one month's salary for the first offence, and two months' for the second. Fines were also imposed on the registrar at the rate of seven taels for the first offence, and fourteen taels for the second. At the third offence the names of both were submitted to the Board. The president of the school was also dealt with according to the fixed regulations for other educational officials, a fine of

(148) 中國醫學大辭典 *Dictionary of Chinese Medicine*, pp. 4404, Commercial Press, Shanghai.

(149) 元典章 *Yüan Tien Chang* or *Institutes of the Yuan Dynasty*.

half a month's salary being imposed for the first offence, one month's for the second, and two months' for the third.

(b) If the teacher was found incompetent, lax in discipline, and lazy in his teaching, for the first offence he was fined half a month's salary, and the registrar was fined five taels. For the second offence, one month's salary for the teacher, and seven taels for the registrar. At the third offence their names were sent to the Board. The president was fined ten days salary for the first offence, half a month's for the second, and one month's for the third offence.

In the third year of Yin Yu 1317 A.D., state medical examinations were re-introduced. They were conducted somewhat like the ordinary competitive government examinations of former times, i.e., once every three years. Those who passed the medical examinations were given appointments; those who failed were referred to the examining board for decision to suspend practice. The first examinations were held in autumn in the provincial towns and were open to all comers able to comply with the following requirements: Candidates were to be above thirty years of age, of good medical knowledge, high moral character, and esteemed by their friends. Out of the candidates one hundred were selected from each place. The following autumn the examinations were held in the Capital and only thirty candidates were chosen. In the final tests each candidate was examined twice. At the first sitting two essays, one on the principles of medicine and one on therapeutics, were required. At the second sitting two further essays were required, one on the principles of medicine and one on materia medica. The thirty successful candidates were again classified into grades. Those in the first grade were appointed court physicians, those in the second grade as assistant examiners, and those in the third grade as teachers.

In the same dynasty, women doctors were for the first time given official recognition. They were first selected by the Government Office in the country, then brought to the Imperial Chamberlain, and lastly examined by the court physicians. The successful ones were allowed to have their names recorded in the book and wait for appointments(150).

(150) 長安客語 *Chang An Keh Hua*.

CHAPTER XVI

THE FOUR FAMOUS DOCTORS OF CHIN YUAN

After the Sung dynasty there came another change in the tendencies of medical research. Independent thinking gradually began to manifest itself. The publications became controversial, attacking old writings as well as contemporary literature. Four distinct schools may be recognized. Liu Shou-chen (劉守真) propounded the theory that diseases were caused by excessive heat in the body and advocated the use of cooling medicines. Chang Tzu-he (張子和) compared diseases to a foreign substance in the system which should be attacked and driven out by drastic drugs, such as diaphoretics, emetics and purgatives. Li Tung-yüan (李東垣) emphasized the importance of the spleen and stomach and ascribed all ailments to derangements of the digestive tract. Chu Tan-chi (朱丹溪) thought that malnutrition was the root of all troubles; hence he extolled the value of tonics. These men are called the "Four Famous Doctors of Chin Yüan" (金元四大家). All later writers only revolved around the different schools.

Liu Shou-chen (劉守真) *alias* Wan Su (完素), the first of the quartet, was a native of Ho Chien. The *Chin History* gives a short account of his life. In the preface of his own book, the *Su Wen Ping Chi* (素問病機) (151), he states that when he was 25 years old he devoted his whole attention to the study of the *Nei Ching*. At the age of 60 he met a stranger who made him drunk with some delicious wine. When he awoke he felt much wiser and thereafter became very successful in his practice. His theory of excessive heat has been much discredited, especially by Chang Chieh-pin (張介賓) who believed his cooling remedies were rather dangerous. They might be too drastic when applied to the people of the South, who are comparatively weak; but with the sturdy and strong Northerners the effect was different. He lived among these people and knew their constitution well. Used with proper precautions his methods were not altogether unsuccessful.

In the opinion of Li Tao: "He grouped all diseases under the *Theory of the Five Revolutions and the Six Influences* (五運六氣). For example, he classified wind diseases, dizziness, vertigo, etc. under

(151) 李濂醫史 Li Lien: *Medical History*.

the wood element and the liver; pain, itchiness, ulcers, wounds under fire and the heart; oedema, swellings, heartburn, under earth and the spleen; respiratory hindrances, etc. under metal and the heart; chills and colds under water and the kidney. He further arbitrarily divided diseases under the *Six Influences*, namely wind, heat, moisture, fire, dryness and cold which theory, when viewed in the light of modern medicine, was without much value. His other writings were along the same lines, there being no new findings. It appeared that he was much obsessed with these doctrines. He could not be said to have made any real contribution to medicine" (152). The following is a list of works from his pen:

Essentials of Revolutionary Influences 運氣要旨論
Principles of Treatment 醫方摘要
Prescriptions from Su Wen 素問藥證
Formulas for Typhoid 傷寒直格方
Essays on Brightness 宣明論
Su Wen Medical Forms 素問玄機原病式

The second of the group is Chang Tzu-he (張子和), also named Ts'ung Cheng (從正), a native of Kao Cheng of Hui prefecture. He was at one time (1217-1221) appointed court physician, but having no inclination for official life he resigned soon after and spent his time with his friends Ma Chih-chi (麻知幾), Ch'ang Chung-ming (常仲明) and others in private studies. As a result of their joint labours the *Ju Men Shih Ch'in* (儒門事親) or *Literati's Care of Their Parents* was compiled. The title of the book was based on the classical quotation—"only the educated can understand the working of nature and to be filial one should know something of medicine" (153). The work consists of 15 volumes where are found Chang Tzu-he's famous three methods—diaphoretics, emetics, and purgatives. He also classified prescriptions under six main headings, namely: wind, heat, moisture, fire, dryness and cold. Even in his day many disagreed with his views; hence most of his writings were in defence of his policies.

He disapproved of the current notion about tonics, saying that "if one wants nourishment the five grains, five meats, five vegetables are excellent tonics. Is it possible to get them from dried grass, dead bark, roots and kernels?" He devoted a whole chapter to this question, pointing out the common fallacy of taking tonics indiscriminately and the absolute ineffectiveness of such articles. The *Literati's Care of Their Parents* was written in good literary style. When discussing a disease Chang usually illustrated it with some case histories to prove his point, which was a great advance over the mere theorizing of his predecessors. He was a real clinician basing his teaching

(152) 李鴻, 世界醫史(未刊)

(153) 惟儒者能明理而事親者當知醫

on actual observation. Unquestionably he came nearer to the ideals of the modern doctor than any of his contemporaries.

Li Tung-yüan (李東垣) (1180-1251), the third member of the famous group, whose real name is Li Kao (李杲) *alias* Li Ming-chih (李明之), came from Chin Ting. He styled himself the "Old Man of the Eastern Wall" (東垣老人).

There is a legend to the effect that his grandfather was once a poor man. One night while he was studying, a girl came out of the ground to the west of the room. She spoke to him and gradually came nearer trying to take liberties. But Li remained unmoved. When the girl was on the point of leaving, he enquired of her what kind of ghost or spirit she was. The girl took a pen and after writing a few words on the table re-entered the ground. Li then read the poems of Tzu Mei and suddenly realized that reference was made to riches. He therefore dug up the earth and discovered a basket of gold. On the top of the basket was a stone on which was engraved this incscription. "Give this basket of gold to Li's grandson who will be a famous doctor(154).

Thus born of a rich family it is said that he was different from other children even when young. As he grew up he showed himself to be sincere, loyal, and careful in his associations with others. Pleasure haunts had no attractions for him. His friends, disliking his puritanical ideas, once sent a prostitute to him on purpose. He was so enraged that he discarded and burnt the robe which had been touched by the woman, so high were his ideals of chastity. He studied the classics under various teachers. He built a school in the vacant lot adjoining his residence to accommodate the scholars from different parts of the country, rendering financial assistance to those who were poor. In 1201-1208 A.D. there was a famine and many became destitute. He contributed a large sum of money for their relief. When his mother was ill he engaged several doctors of the district to attend her. But none could find out the cause and the patient died. Overwhelmed with grief he resolved henceforth to take up medicine to atone for his faults. Learning that there was a famous old doctor at I Shui named Chang Yüan-su (張元素) he went there, offered a high tuition fee and studied under him. After several years he mastered all the necessary knowledge. It happened that an epidemic was raging at that time and hundreds died in spite of all kinds of treatment. Li spent days and nights studying the disease and eventually wrote a prescription for it. This proved so effective that he ordered the recipe to be written on a board and erected at the market place. The results were so marvellous that the inhabitants thought it a godsend and carved it in stone. He

(154) 嘉運燕語

did not pose as a practitioner and the people were not aware that he knew medicine. Later, on account of the civil war, he became a refugee at Pien Liang where he practised his profession among the official class. In 1244 A.D. he returned to his native place. One day he mentioned to his friend Yün Te-fu (運德父) that he was getting old and there was no one to succeed him in his practice. Yün told him of a promising doctor named Lo T'ien-yi (羅天益) who was sincere, honest and ambitious to improve his education. Some days afterwards the young man was introduced to the old doctor. "Do you want to be a money-making doctor or a life-saving physician?" asked Li. "I come for the sake of knowledge," replied Lo. Thereupon Li welcomed him as a pupil, taught him, and supplied him with all daily needs. Just before his death he handed all his writings to Lo with the instruction that his work be carried on for the benefit of the world. He died on the 25th day of the 2nd moon of Hsin Hai (辛亥), 1251 A.D., aged 72(155).

Li's central idea was that every malady could be traced to derangement of the organs of digestion. He went so far as to put the large intestines, small intestines and the five viscera under the control of the stomach. When this organ was weak then the whole system suffered in consequence, resulting in disease. He thought that purging, diaphoresis and emesis were dangerous methods and therefore advocated aromatic stimulants to strengthen the vitality. One of his chief specialities was the *Pu Chung Yi Ch'i T'ang* (補中益氣湯) or *Concoction for Vitalizing the Spirits*. This famous recipe consisted of the following ingredients:

黃耆	Astragalus Hoantchy, 1 mace.
人參	Ginseng, 3 candareens.
甘草	Licorice, 5 candareens.
當歸	Cryptotaenia canadensis, 1 mace.
橘皮	Orange peel, 5 candareens.
升麻	Actea spicata, 2 candareens.
柴胡	Bupleurum falcatum, 2 candareens.
白朮	Aristolochia recurvilabra, 3 candareens.

He was generally regarded as the founder of the Tonic Sect. Of the many books he left behind the following are well known: *I Hsüeh Fa Ming* (醫學發明), *P'i Wei Lun* (脾胃論), *Nei Wai Shang Pien Huo Lun* (內外傷辨惑論), *Lan Shih Pi Tsang* (蘭室秘藏), *T'zu Shih Nan Chih* (此事難知), *Yao Hsiang Lun* (藥象論).

The last of the four is Chu Tan-ch'i (朱丹溪) also named Chen Heng (震亨 1281-1358). As a mark of respect people styled him "The Squire of the Scarlet Stream" (丹溪翁). He was a native of I Wu in Chekiang and had his education under local tutors. Being

well versed in the classics he entered the ranks of the literati with the hope of becoming an official. When he learnt that Wen I Kung (文懿公), an able exponent of Chu Hsi's philosophy, was holding an open forum at Pa Hua Mountain he went there for further study and became deeply interested in the theories of reason and virtue. One day Wen I said to him, "I am suffering from a chronic disease. It requires a skilful doctor to cure it. You are a bright man, would you take up medicine as a profession?" Chu Tan-ch'i, who had had some experience through nursing his mother, at once replied: "Since by specializing in a single art one can diffuse kindness, even though not an official he is one just the same."

Thereupon he threw up his literary pursuits and concentrated his efforts on medicine. At that time the most popular book was Ta Kuan's *397 Recipes*. After devoting days and nights to this work he felt convinced that the treatment of modern diseases by obsolete methods was bound to fail. As the local doctors were not able to help him he packed up his belongings and went out to search for a teacher. He crossed the Chien Tang River, visited Soochow, Nanking and other places but without success. Coming back to Hangchow he was informed of a famous doctor named Lo Chih-t'i 羅知悌 who led a very eccentric life. Chu came several times to pay his respects but was not received. At last his persistence procured him admittance, and he became a pupil of the veteran scholar. Lo explained to him the teachings of the three great masters—Liu, Chang and Li. When Chu had learnt all there was to learn he returned to his native village. The local doctors laughed at his new theories. But his old friend Wen I, whose long illness had baffled the skill of all the doctors, was filled with joy and exclaimed; "Now my chance of recovery has come;" Chu employed his new methods and the patient recovered. Immediately derision gave way to admiration. And in a few years' time his fame had spread all over the country.

Feeling an inadequacy in the teachings of the three great masters he elaborated on the old theory of the *Internal Fires*. These are of two kinds—the *Principal Fire* (君火) which resides in the heart, and the *Auxiliary Fire* (相火) which lodges in the liver and kidney. When at rest it nourishes the whole body and conserves life; when in motion it burns up the secretions and injures the vitality. All motion indicates fire. Thus oppression of the chest is supposed to be due to lung fire, anger to liver fire, drunkenness to spleen fire, worry to heart fire, licentiousness to kidney fire. Again, stomach fire causes toothache and neuralgia, gallbladder fire, bitter taste in the mouth and restlessness, large intestine fire sore throat, furred tongue and constipation, small intestine fire retention of urine, gonorrhoea and leucorrhoea, bladder fire pain in the lower belly and difficulty in

micturition, *San-chiao* fire giddiness, feeling of malaise and flushed palms and soles.

He further advanced the theory that the *Yang* principle was always in excess while the *Yin* principle was frequently defective. The logical procedure, therefore, consisted in subduing the excessive *Yang* and making up the deficit by nourishing the *Yin*. On this account people considered him as a protagonist of the Nourishing the *Yin* Sect. He wrote the *K'e Chih Yü Lun* (格致餘論), *Chü Fang Fa Hui* (局方發揮), *Chin K'uei Kou Yüan* (金匱鉤元), *Shang Han Pien I* (傷寒辨疑), *Pen-Ts'ao Yien-I Pu-Yi* (本草衍義補遺), *Wai Ke Ching Yao* (外科精要), etc. He died in 1358 at the age of 77.

Aside from the above four leaders there were still a few others who were quite prominent in the field of medicine at the period under review. Foremost amongst them was Chang Yüan-su *alias* Chieh-ku (張元素字潔古), who made the bold announcement that in view of the different conditions between ancient and modern times it was impossible to treat new diseases with old methods. He therefore discarded the obsolete formulas and devised a system of his own. Most of the doctors of the Chin Yuan period were influenced by his teachings. The story is told that Liu Shou-chen was once laid up with typhoid fever. On the eighth day of the disease the headache was intense, the pulse rapid, with anorexia, vomiting, and signs of delirium. Chang went to see him but the patient turned his head to the wall. "Why take this attitude, towards me?" Chang asked. He felt Liu's pulse and explained what it indicated. "Did you take such and such a drug in the beginning?" Chang inquired. "Yes" Liu replied. "You made a mistake," Chang continued. "The properties of that drug are cooling and descending. It lowers the greater *yin*, extinguishes the *yang* and therefore the perspiration ceases. Now your pulse is such that if you take this drug instead, you will notice the effect." Liu was filled with admiration, took the advice and was cured.

Li Tung-yuan was also one of Chang's pupils. Li studied several years under him, paying one thousand dollars as tuition fee. Another pupil of Chang's was Lo Chih-t'ai (羅知悌) who in turn was the teacher of Chu Tan-ch'i. Thus three of the famous quartet were either directly or indirectly his disciples. The *Chin History* gives only a very short account of his life. It is said that he was a native of Yi Chow. At the age of eight he sat for the junior competitive examination and graduated Doctor of Literature at twenty-seven. For some reason he was disqualified. Thereupon he left official life and turned to medicine. But he was not successful. One night he dreamt that a man with a hammer and chisel was chiselling his heart

and put several books into the opening. Since then he could understand the mysteries of the healing art and became famous after the episode with Liu Shou-chen. The following is a list of his writings.

The Pearl Bag, 1 vol. 濟古珍珠囊
Chieh Ku's Herbal, 2 vol. 濟古本草
First Lines on Medicine, 3 vol. 醫學啓元
Life Preserving Treatise, 3 vol. 病機氣宜保命集
 He also wrote a commentary on Wang Shu-he's *False Classic*
 濟古註叔和脈訣

Ch'eng Wu-i (成無己) was known for his *Commentary on the Shang Han Lun*, being considered the best of its kind in Chinese medical literature. He spent a life time in these studies and wrote the *Ming Li Lun* (明理論) at the age of 78 and completed his famous commentary at 80. He was over 90 years old when people saw him at 1155 and from this it may be inferred that he must have been born between the reigns of Chia Yin and Chi Ping (1062-1065).

Ke Chien-sun also named Ke-chiu (葛乾孫字可久) was a native of Changchow. Tall, massively built, strong in arm, he was fond of fencing and military tactics. Later he devoted himself to studies and delved also into astrology, divination and the occult sciences. Though his essays were brilliant, nevertheless he was never successful in the competitive examinations. He had his medical training under his father who was a celebrated doctor. However he never cared to see any patient unless called in for consultation in certain difficult cases. In addition to drug treatment he frequently resorted to other measures. There was a case on record in which he employed hydrotherapy, a method rarely used by the ordinary practitioners. One student suffered from typhoid with no perspiration. The patient became delirious and ran along the bank of a stream. He immersed him in the cold water for a long time, then wrapped him in cotton quilts. After this the patient perspired and recovered under this heroic treatment. Ke was the author of the *I Hsüeh Ch'i Meng* (醫學啓蒙), *Lun Shih Er Ching Lo* (論十二經絡) and the *Shih Yao Shen Shu* (十藥神書).

CHAPTER XVII

THE PEN-TS'AO KANG-MU OR GREAT HERBAL

One of the outstanding contributions to medicine in the Ming dynasty was the publication of the *Pen-Ts'ao Kang-Mu* (本草綱目) or Great Herbal. This great work was compiled by Li Shih-chen (李時珍), a native of Kin Chou, a town on the right bank of the Yang Tsze River, in the east of the province of Hupeh. The exact dates of his birth and death are not recorded. According to his son's account he was rather delicate in his boyhood and was also very thin when grown up. Though a diligent scholar he disliked the classics, but had a leaning to medical literature, particularly materia medica. At one time he held the office of keeper in Prince Tso's ancestral hall but was later promoted to magistrate of Pang Chi in Szechuen. At the age of thirty he began researches in medicine and for forty years he devoted his attention to these studies. With a wide knowledge of medical literature he felt dissatisfied with the *Pen-Ts'ao* of his time, particularly because of the confusion of nomenclature. A single drug might be described in several categories, while two or three entirely unrelated herbs might be placed under one heading. Thus he was led to compile the *Pen-Ts'ao Kang-Mu* which was begun in the 31st year of Chia Ching (1552 A.D.) and finished in the 6th year of Wan Lih (1578 A.D.) (156).

All the preceding monographs on materia medica, to the number of 41, were carefully consulted; while references to 360 medical treatises and 591 other scientific and historical works were freely made use of. He corrected the mistakes of his predecessors, deleted duplications, filled in omissions, and introduced many new preparations such as opium and tobacco. The author spent 27 years in writing this book, altering the manuscript three times before it was issued in its final form. Unfortunately he died soon after the completion of his task. However, he left a will commanding his son Li Chien-yüan to submit the manuscript to the throne for approval. This was accordingly done and the emperor Shen Tsung authorized its publication in 1596 A.D. Numerous reprints have appeared since the first edition and even today it is considered one of the most popular books on medicine, being widely read both by the profession and the laity.

This monumental work consists of 52 volumes, in addition to the preface, introduction, 2 volumes of index of diseases, and 3 volumes of illustrations. The total number of substances enumerated is 1892 of which 1518 were taken from previous works and 374 added by Li Shih-chen himself. There are 142 rude drawings or sketches of the articles mentioned and 11,091 recipes, ancient and modern, selected from previous writings. Of the drugs listed 1074 are derived from plants, 443 from animals, and 354 from minerals and other substances. Under each drug the proper name is first given, then its popular names are collated, corrected and explained as to their origin and meaning. Next is the information collected from the literature, with critical remarks by the author. The source, form and general history are then given and collection, manufacture, and dosage of the drug are followed by directions as to its preservation. After this the nature and properties, especially as regards flavour, taste and smell, are described (157). Finally there is a host of recipes selected from previous authors with indications for use. In some of the articles an attempt is made to test the chemical purity of the drug.

A general view and arrangement of the book is as follows:—It begins with the preface followed by a table of contents and illustrations of the various drugs. The first two volumes are devoted to a review of the various *Pen-Ts'ao* compiled from Shen Nung down to Li Shi-chen together with the source of references cited. The elements of dispensing, pharmacology, incompatibilities are then discussed. There is also a list of synonyms and contra-indications. The third and fourth volumes consist of an index of diseases with their appropriate remedies; while the remaining volumes deal with the drugs proper. A summary of these is herewith appended:

<i>Volume</i>		<i>Kinds</i>
5	Water	43
6	Fire	11
7	Earth	61
8	Metals	28
8	Precious Stones	14
9, 10, 11	Ordinary "	92
12, 13	Mountain plants	70
14	Odoriferous plants	56
15, 16	Field plants	126
17	Poisonous plants	47
18	Ground plants	93
19	Water plants	22
20	Plants which grow on stones	19
21	Moss	16

- (157) According to Chinese theory each drug possesses certain features as to taste and action which produces a different effect on the system. Five 'tastes' 味 and four 'vapours' 氣 are distinguished. The five 'tastes' are pungent, sweet, bitter, sour and salty. The four 'vapours' are heating, cooling, warm and cold. By vapour is meant the action or properties of the drug.

21	Plants of mixed nature	{ used in medicine	9
		{ not used in medicine	153
22	Grains that serve for food		12
23	Chestnuts, caltrops, etc.		18
24	Peas, beans, etc.		14
25	Grains that are used for fermenting wines		29
26	Vegetables having a strong smell or taste		32
27	" that are soft and gelatinous		41
28	" " bear fruits as cucumbers		11
28	" " grow in water		6
28	" of nature of mushrooms		15
29	Fruits grown in open fields		11
30	Fruits grown in the hills		34
31	Wild fruits		31
32	Strongly flavoured fruits as peppers		13
33	Dessert fruit like grapes and melons		9
33	Aquatic fruit		6
33	Miscellaneous		32
34	Fragrant trees		35
35	Forest trees		52
36	Shrubs trees		51
37	Trees such as require props for their growth		12
37	Trees such as grow in springs		4
37	Unclassified trees		7
37	Miscellaneous trees		19
38	Substances derived from garments		25
38	Substances derived from utensils		54
39, 40, 41, 42	Insects		100
43	Dragons		9
43	Snakes		17
44	Fishes with scales		31
44	Fishes without scales		28
44	Miscellaneous		9
45	Molluscs (tortoise, crawfish, crab, etc.)		17
46	" (Oysters, mussels, clams, etc.)		29
47	Water fowl		23
48	Domestic fowl		23
49	Woodland fowl		17
49	Mountain fowl		18
50	Tame animals		26
51	Wild animals		38
51	Rats and such-like		12
51	Animals		8
52	Parts of the human body		37

The *Pen-Ts'ao Kang-Mu* is undoubtedly the best work on Chinese materia medica. It is the most varied and comprehensive known. Not only does it mention all sorts of most extraordinary substances, ranging from tiger bones to bat's dung, but a host of articles, which are officinal in modern pharmacopœias, are also included. Besides, it contains not a few valuable products such as kaolin, eumenol, chaulmoogra oil and ephedrine, which have only recently come to be known to western scientists.

Father F. Courtois, in a review on Chinese botany, remarks: "The merit of its author lies in having brought together and preserved

what is best in its predecessors, and in having given a critique of them which is on the whole a fairly judicious one"(158). Porter Smith also says: "Many plants, having the characters "Hu" (胡), I (夷), or Hai (海), are said to be of foreign origin. They were brought from Central Asia by such persons as the legate Chang Chien of the Han dynasty, but are indigenous in a part of China Proper. We cannot then but admire the frankness with which many plants are acknowledged to be in some sense imports. Many curious, nonsensical and disgusting things are recommended in the *Pen-Ts'ao*, but the good sense of Li Shih-chen has purged its pages to a great extent, corrected some of its most ridiculous blunders"(159).

In such an enormous work there are bound to be mistakes and defects. Some of the criticisms are that too many unrelated and useless articles are included which makes it very difficult for one to know what is good; the great number of recipes, some of them not well chosen, add to its cumbersomeness instead of enhancing its value and the lack of a proper index in a work of this nature is a great drawback. It should be remembered that the tendency of the Ming writers was to produce voluminous works. It was therefore unavoidable that at times quality was sacrificed for quantity. Li Shih-chen deserves all the praise accorded him in Ming history, for a work of this magnitude requires immense resources and the undivided efforts of a life time. Generally, such an undertaking is conducted by a government or an institution and by a large staff of workers. But as far as we know, he had no such help or encouragement, working single-handed at this self-appointed task up to the time of his death at the ripe age of seventy. Such perseverance and untiring devotion to research is a model for the profession.

Besides the *Pen-Ts'ao Kang-Mu* he also wrote two short treatises on the pulse under the titles of *Pin-Hu Mo-Hsüeh* (瀕湖脈學) and *Ch'i-Ching Pa-Mo-K'ao* (奇經八脈考). These were published in the 43rd year of Chia Ching 1564 A.D. and were regarded as authorities on this subject. There is a supplement to the *Pen-Ts'ao Kang-Mu* entitled *Pen-Ts'ao Kang-Mu Shih-I* (本草綱目拾遺) which may be mentioned here. The latter was not written by Li Shih-chen but by Chao Hsueh-min of the Ching dynasty. It is arranged on the same plan as the great classic and purports to give all the new drugs that have come into use since the Ming dynasty. It is in 10 volumes and was printed in the 10th year of Chien Lung 1765 A.D. In the popular present-day reprints of the *Pen-Ts'ao Kang-Mu*, the two treatises on the pulse, and the supplement, are all included in one set under the first title.

(158) Coullings: *Encyclopaedia Sinica*, Art. *Botany*.

(159) Porter Smith's *Contributions towards the Materia Medica and Natural History of China*, preface.

It was a common practice in the T'ang and Sung dynasties for the emperor to command the court physician or other specialists to compile or revise the materia medica making it the official textbook. Li Shih-chen's work on account of the imperial sanction to its publication had the same distinction. But strange to state, after this no such encouragement was ever given to works on materia medica. Thus we may say that the *Pen-Ts'ao Kang-Mu* is the last of the Chinese Official Pharmacopoeias.

Considerable attention has been directed to it by foreign writers. As early as 1735 Du Halde translated a part of it into French (160), while in 1871 Porter Smith wrote the "*Contributions towards the Materia Medica and Natural History of China*," which is largely based on the *Pen-Ts'ao*. In 1911 Stuart, having extensively revised Smith's work, published the *Chinese Materia Medica, Vegetable Kingdom*. This is the first of a set of books on the vegetable, animal and mineral kingdoms, which he had intended to bring out. Unfortunately he died before his task was completed. B. E. Read, however, has taken up this work and has issued four books to complete the series (161). Portions of the *Pen-Ts'ao* have been translated into English by different writers at various times. Of the 52 volumes 35 have been translated:—Vol. 1 to 2, abridged translation; vol. 3 to 7, not translated; vol. 8 to 34, full translation; vol. 35 to 46, not translated; vol. 47 to 52, full translation. It may be said that all the important parts of this book are now to be had in a foreign language. Many of the drugs contained therein have been found to be of therapeutic value to western physicians. These will be dealt with in the next chapter.

(160) *A Description of the Empire of China*, Vol. 2. Account of the *Pen Ts'ao* and a Collection of Recipes.

(161) Read and Pak: *Minerals; Stones*, 1928; Read: *Animal Drugs*, 1931; *Avian Drugs*, 1932; Peking Society of Natural History.

CHAPTER XVIII

NOTES ON SOME FAMOUS ANCIENT DRUGS

The marvellous claims ascribed to some of the old Chinese drugs led to considerable comment in scientific journals in earlier days. Chemists, physiologists and other investigators turned to them expecting to find some new potent therapeutic remedies, but were met with disappointment. They were then discarded and thrown on the scrap heap. While many of them, without doubt, have proved valueless under the searching light of scientific examination, there are still not a few that have survived the acid test of time and experience and have been found effective in clinical practice. Recently a new era brought to light fresh knowledge of the composition and action of several substances and it remains with modern scientists to make further investigations to find out their exact active principles and uses. Much research work has been done by the Japanese along this line, while the valuable contributions of the Peiping Union Medical College, the Chinese Physiological Society, the South Manchurian Railway Medical College, the Henry Lester Institute of Medical Research and other workers during the past few years also deserve mention. The following is a description of some of these preparations.

GINSENG

Kaempfer says that, next to tea, ginseng is the most celebrated plant in the Orient, on account of its root. This, with the Chinese, is the medicine *par excellence*, the last resort when all other drugs fail. It has indeed been well termed the cure-all, as people have a most wonderful faith in its curative and strengthening properties, for which reason it has also been styled by Porter Smith 'the cinchona of China.' In olden days it was reserved for the sole use of the Imperial Household, and it was considered a mark of special favour whenever the Emperor bestowed it upon his high officials in case of a serious breakdown in health.

The origin of the discovery of this root is woven into a weird legend. During the reign of Wen Ti of the Sui dynasty (581 to 601 A.D.), at Shang Tang (上黨) in Shansi, the wail of a man was heard, night after night, at the back of a certain person's house. A search was made for the source of the sound but without result. At last at the distance of about a *li* there was seen a remarkable

ginseng plant. On digging into the ground to the depth of five feet a root was found, which had the form of a man, with four extremities all complete. After this the wail was never heard again. It was therefore called T'u Ching (土精) or Ti Ching (地精) 'Spirit of the Ground' (162).

Ginseng (人參), pronounced Jen-shen in official Chinese language, is derived from a fancied resemblance of the root to the human form. The plant belongs to the family of the *Araliaceae* and the scientific name for it is *Panax Ginseng*. The *Pents'ao* enumerates five kinds of ginseng, viz., the one under consideration, Sha-Shen (沙參), Hsüan-Shen (玄參), Mou-Meng (牡蒙), and Tan-Shen (丹參), referring to *panax*, *adenophora*, *scrophularia*, *polygonum*, and *salvia* respectively. Each of these is well identified and described under its appropriate title. In an unscientific generic sense they are all ginsengs, being offered to outsiders as cheap substitutes. The genuine plant has five parted, palmate leaves, bears minute flowers in an umbellate form, and has red berry-like fruit. It takes a long time to grow to maturity, hence the older the plant, the greater the value set on it. The root is covered with rings from which the age is ascertained. The wild is more valued than the cultivated species. In Manchuria and Korea it is usually found growing in the shade of trees; notably that of the Chia (槲) *Tilia* or *Panlowina*(?). This tree and the ginseng plant are thought to have mutual sympathy, and whoever would find the latter must look for the tree. The root is dug up in the spring and autumn.

It is said that the Koreans observe many peculiar rites when gathering the wild herb, it being regarded, more or less, as a religious undertaking. One month before going into the mountains these herb gatherers abstain from marital relationships and wine and take a vegetarian diet. On the morning of the eventful day they cleanse their bodies with cold water and make offerings before the gods. The gatherers are usually between forty and fifty years old, young people being rarely seen, for it is believed that sometimes the wrath of the mountain spirits may be incurred, bringing disaster to the whole family (163).

Great care is required to keep the root in good condition as it is liable to be attacked by worms. It is usually prepared by steaming and drying in still air, so as to make its appearance reach the accepted standard of clearness. Ordinary ginseng is prepared by dry-

(162) In mediaeval times in Europe we have a similar story concerning the mandrake, which was reputed to cry like a human being when pulled by the roots. Those who heard the voice were sure to die, hence dogs were specially trained to pull them out of the ground. The mandrake was used at one time as a love potion in Europe.

(163) 新本草

ing in the sun, or over a charcoal fire. The finished product is wrapped in paper and sealed up in earthenware jars.

In order to find out whether the ginseng is genuine or otherwise the following test is resorted to. Two persons are sent out for a long walk, one with a piece of the drug in his mouth, the other without, so as to act as control. If at the end of three to five *li* the one with the ginseng in his mouth is as fresh as ever while the other is out of breath, then the drug is genuine.

Ginseng is one of the most expensive of drugs, the Manchurian root sometimes costing 500 times its weight in silver. "The prices named were almost fabulous, a single root being valued at from £250 to £300. I was told on the river that ginseng sells for £30 per Russian lb., but that in a bad year the Chinese regard it as valuable as gold, and give up to £40 per lb." (164). In 1891 Korean ginseng was worth Tls. 10 to 14 per catty. Sometimes roots of special quality are worth Tls. 250 per catty; the usual price for native ginseng is Tls. 80 (165). The quotation for Korean ginseng often goes up to £15 per catty, which is about seven times as high as the price paid for American ginseng and thirty times that for the Japanese variety (166).

Commercially speaking, there are four trade varieties of ginseng—Manchurian, Korean, Japanese and American. The last two are not considered equal in quality to the first two kinds. The Manchurian root is reputed to be the best. It was formerly a government monopoly and was gathered by detachments of soldiers detailed for the purpose. As the supply is not sufficient to meet the constant demand, Korean and Japanese products are also imported. In the time of Tao Kuang, Manchurian ginseng was on the verge of extinction and its collection was forbidden by Imperial decree. The Korean brand is also highly valued. When Korea became a dependency of China large consignments of it were sent annually to Peking as tribute. On account of the scarcity of the wild variety, farms for its cultivation were established on an extensive scale. The plant, however, needs the greatest possible care. The disastrous effects of the disease which broke out in 1902 crippled the business for eleven years and even threatened to extinguish the entire trade, there being no export in 1910. The Japanese species is not indigenous to that country but was brought over from Korea and artificially cultivated. Owing to its inferior quality it is not looked upon with the same degree of esteem. About 300,000 catties are imported into China every year. There was at one time a large importation of American ginseng, but this has now practically ceased owing to the gradual extinction of the

(164) Lansdell's *Through Siberia*.

(165) B. E. Read's, *Ancient Medicine*, Far Eastern Times, October, 1936.

(166) Coulings, *Encyclopaedia Sinica*, Art. Ginseng.

plant which cannot be grown artificially with success. In 1916 Tls. 3,761,505 worth were imported. Of late years the Department of Agriculture at Washington has taken an interest in this trade, having published several bulletins upon ginseng culture.

As to its virtues, the *Pen-ts'ao* says that it is "a tonic to the five viscera, quieting the animal spirits, strengthening the soul, allaying fear, expelling evil effluvia, brightening the eye, opening up the heart, benefiting the understanding, and if taken for some time it will invigorate the body and prolong life." Alterative, tonic, stimulant, carminative, and demulcent properties are the ones principally ascribed to it, and it is prescribed in nearly every kind of disease of a severe character, with few exceptions, but with many reservations as to the stage of the disease at which it may be administered with the greatest benefit and safety. All forms of debility, spermatorrhoea, the asthenic haemorrhages, the various forms of severe dyspepsia, the persistent vomiting of pregnant women, chronic malaria, continued fevers, exhausting discharges, old coughs, and polyuria are treated with this drug in the hope of relief and cure. It is regarded as a most potent aphrodisiac and a favourite remedy for matrimonial unproductivity.

The earlier standard medical works, however, did not give much credit to these claims. "This plant possesses little more than the properties of a stomachic. It is considered by western physicians to have no medicinal virtues worth mentioning, and is thought to be a superfluous member of the Pharmacopoeia. The extraordinary medicinal virtues formerly ascribed to ginseng exist only in the imagination of the Chinese. Its constituents are quite unimportant. The Chinese doctors extol ginseng as a remarkable stimulant, but in my experience it has no such effect particularly in the last stage of acute diseases. With prolonged use it has some tonic properties" (167). In spite of the above the average Chinese has a most profound faith in its efficacy. Fabulous stories have been told of cases where the sick were practically *in articulo mortis*, but upon the administration of ginseng were sufficiently restored to transact final items of business (168). Porter Smith also says that "several cases in which life would seem to have been at least prolonged by the taking of doses of this drug, so as to allow of intelligent disposition of property, indicate that some positive efficacy of a sustaining character does really exist in this species of Ivy wort".

True ginseng has not been carefully studied by any European observer on account of its scarcity, the Imperial monopoly and its extremely high price. Most of the experiments have been conducted

(167) 新本草綱目

(168) Stuart: *Chinese Materia Medica*.

on inferior specimens and therefore no important findings have been reported. S. Garriques has analysed the American variety and found it to contain Panaquilon $C_{24}H_{32}O_{18}$ (169). In 1889 Davydow, a Russian, studied the Korean kind with similar results. Two Japanese scientists, Abe and Saito (170) have recently isolated a potent glucoside, named by them 'Ginsenin' which is soluble in absolute alcohol but not in ether nor in petroleum ether. This followed the chemical work done by Kondo and Tanaka who reported the preparation of a pure saponin-like glucoside by extraction with methyl alcohol and subsequent purification by precipitation with lead acetate and barium hydroxide.

The potency of this principle was demonstrated by Saito (171). He showed that ginseng has a restraining effect on adrenalin hyperglycaemia, alimentary hyperglycaemia, and diuretic hyperglycaemia. Abe and Yonekawa (172) found two particularly important actions of ginsenin:

1. "Ginsenin has a mild tail-raising action when it is injected into the subcutaneous tissues of the young white rat. The tail-raising action may be due to excitability of the sacral cord, and is one of the typical reactions of an aphrodisiac, such as Yohimbine.

2. Ginsenin has a mild sympathicotonic action. When it is applied to the excised organs, such as intestine or uterus, they become sensible to the action of adrenalin. When there is a mild sympathetic stimulus it gives rise to warm feeling. Consequently the warm feeling, which is caused by oral administration of ginseng, may be due to this action.

In these experimental results, we found the reason why the ginseng has been favoured as a tonic and aphrodisiac by the laity, and we determined that the glucoside "Ginsenin" is the active principle of ginseng".

Further investigation has been made into its diuretic effects. When ginseng is taken in large amounts the output of urine is increased and later decreased. It is stated that the so-called pure principles formerly isolated were mixtures and did not even represent the active part of the drug (173).

CHAULMOOGRA OIL

Leprosy, from the earliest ages, was generally believed to be incurable. Recent researches, however, have demonstrated that in

(169) 草本新綱目 p.10.

(170) K. Abe and I. Saito: *Jap. Med. World*, 1922, ii, 166.

(171) I. Saito: *Keio Med. Journ.*, 1921, i, 8.

(172) K. Abe and M. Yonekawa: *Transact. Far East. Assn. Trop. Med.*, 1925, i, 1065.

(173) S. Inada and J. Takamezu: *Jap. Med. World*, 1922, ii, 343.

chaulmoogra oil we have a very effective remedy which practically amounts to a cure. This drug is obtained from a tree called *Hydnocarpus* which is a native of Siam. It is also common in Cambodia, Malaysia, Assam, the Indian Archipelago and other parts of Eastern India. The tree bears large globular fruit about the size of an orange, containing numerous irregular oval seeds embedded in the pulp. It is the oil expressed from these seeds that has been found useful for leprosy. Chaulmoogra is the Indian vernacular for the drug while in other countries it has other names. The Burmese call it Kalaw; in Siam it is known as Lemtam; and in China its name is Ta Feng Tzu. The *Pen-Ts'ao Kang-Mu* gives the method of preparing the oil as follows:—Take three catties of the seeds, discard those that have turned yellow, remove the husks and grind into fine powder. Pack in an earthenware jar and seal up tightly. Put the jar into a pot of boiling water and seal the pot so that no steam can escape. Boil until the oil assumes a black and tar-like appearance. It is administered in the following way:

Chaulmoogra oil	1 ounce
<i>Sophora flavescens</i>	3 ounces

Mix into a paste with wine and make into pills the size of a *sterculia* seed.
Sig: Take 50 pills with hot wine before meals.

The earliest allusion to the use of this remedy for the treatment of leprosy in Chinese literature was by Chu Tan-chi in the 14th century. He, however, disapproved of the drug on account of its irritating effect on the stomach.

The history of this drug probably dates back several thousands of years. The origin of its use in leprosy may be difficult to trace, but there is a legend from Burmah given by Joseph F. Rock which is highly entertaining. It relates that in the days of yore, before the time of Buddha, there reigned a King in Northern India by the name of Ok-sa-ga-rit. This King had five sons and five daughters. These five princes exiled themselves, and their sisters volunteered to do the same, owing to the naming of a younger (sixth) prince, a son by a second queen, as heir apparent. The story tells that Piya, the eldest sister of these five princes, who was much honoured and revered, became a leper. The brothers and sisters, for fear of hurting her feelings, took her into a jungle, as if on a pleasure trip, and when they arrived at a certain place where there was a cave they left her there with all kinds of provisions. The cave, which had a very narrow entrance, was well protected.

At the same time Rama, once the king of Benares, was living in the jungle under the following circumstances: While king of Benares, he became afflicted with leprosy, and although his court physicians did their best they failed to relieve him of his sufferings or to improve his condition. He decided to abdicate the throne in

favour of his son. So, leaving the palace, he went into the jungle and subsisted entirely on herbs and roots, but especially on the fruit and leaves of the Kalaw tree. After a time he was completely cured and felt better and stronger than when he had lived in the palace surrounded with luxury. He lived in the hollow of a large tree, which he converted into a home.

One day a tiger, prowling near Piya's cave, was attracted by the scent of a human being, and made frantic efforts to gain entrance to the cave. Piya was so horrified that she gave a piercing scream. Rama, hearing the cry from his hollow tree, noted the direction whence it came and next day went in search of the person who gave the agonizing cry. He discovered the cave and shouted, "Who lives in the cave?" Piya, hearing a human voice replied, and after the usual greetings, explained her circumstances. He asked her to come out, but she refused, being shy and modest. So Rama forced his way into the cave and carried her off to his hollow tree. He then made her eat the fruit, roots and leaves of the Kalaw tree which had wrought such a wonderful cure for him. She was soon cured, and Rama took Piya unto himself as his wife. Piya gave birth to twins sixteen times, bearing thirty-two sons. A hunter from Benares one day came to this part of the jungle and recognized Rama as the former king of Benares. Seeing so many young princes, the hunter asked who they were. Rama explained the circumstances, and the hunter, on his return to Benares, related the whole story to the king who was none other than Rama's son.

This wonderful tree is identified today as belonging to the genus *Hydnocarpus*. Of this genus there are a number of trees, the seeds from which are used for the extraction of an oil effective in the modern treatment of leprosy. The early records of India and China both show that the doctors of ancient times were well acquainted with its use.

English physicians travelling in the Far East learned of the use of this efficacious drug, but, certain disadvantages in its use have hindered the treatment of leprosy during the seventy years since the drug was first used by western physicians. Even a relatively small dose of the oil given through the mouth will cause vomiting. Not only does it act as an irritant upon the stomach, but when administered subcutaneously large abscesses frequently form and cause great trouble, rendering this method of treatment very irksome. Various methods, therefore, have been devised for obviating these disadvantages which unfortunately had given this most valuable drug a doubtful reputation. Today there is little doubt about its efficacy. Credit should be given to such men as Macdonald and Dean of the Philippine Islands for first utilizing in 1920 our modern knowledge of the chemistry of the oil in the preparation of the mixed Ethyl

Ester for treatment. Since that time numerous reports from many parts of the world show that it is possible to administer the drug in this form to effect a satisfactory cure of leprosy(174).

EPHEDRINE

This famous preparation, which literally took America and Europe by storm, is derived from Ma Huang (麻黄), a Chinese herb that has been employed in practice for more than four thousand years. Emperor Shen Nung was said to have tasted it and placed it in the "medium class." It is of repute in old Russia where it is known as "Kusmitsch" and Western Europe and Mexico have both been familiar with it as an alpine plant. In America it was at one time thought much of as a specific for syphilis. It grows in great abundance along the edge of the Mongolian plateau, and in the late summer the masses of red berries are quite attractive. It has been reported in China as indigenous to the sea coast; one finds it at Peitaiho, in west Szechuen near Tachienlu, and in Kansu, Shensi, Honan, Shantung and Kiangsu Provinces. It is exported commercially through Nanchang, Tientsin, Hankow and Shanghai(175). According to the *Pen-Ts'ao* description it bears yellow flowers, and produces red, edible berries which have been likened to the raspberry. Pistillate and staminate flowers are borne on different plants. The drug consists of the yellow, jointed stems of the plant, tied up in bundles, or the stems from which the joints have been rejected, cut up into a chaff-like mass. The reason for rejecting the joints is because they are considered to have a medical action differing from, and in a measure counteracting that of the stems. The action is represented as decidedly diaphoretic and antipyretic. It is prescribed in fevers, especially malaria fever, in coughs, influenza, and post-partum difficulties.

The root, which is also known as Kou Ku (狗骨) together with the joints, is considered to have an action directly opposed to that of the stem, and is therefore prescribed in profuse sweating, either critical or natural. It is used as a dusting powder, applied to the whole body. Although it probably has some astringent property, it is not recommended for any other difficulty, or to be used in any different way. The fruit is mucilaginous, with a slightly acrid or pungent flavour, and is eaten by the Chinese(176).

Botanically Ma Huang has been identified as *Ephedra vulgaris* var. *helvetica* *Ephedra intermedia* var. *Tibetica*, and *Ephedra*

(174) The above is taken from Fletcher's *Romance of the Discovery of Chaulmoogra Oil*, The Leper Quarterly, Vol. 2, No. 3, 1928.

(175) B. E. Read: *Ancient Medicine*, Far Eastern Times, Peking.

(176) Stuart: *Chinese Materia Medica*

equisetina (177). Nagai of the Tokyo Imperial University was the first to make scientific investigations into this 'drug'. In 1887 he isolated an alkaloid which he termed ephedrine. Many have studied its possible effectiveness for asthma and related conditions (notably Amatsu and Kubota), but it was K.K. Chen, formerly of the Peiping Union Medical College, who developed it to the present stage, drawing the interest of the scientific world to it. Since then numerous experiments have been conducted on it in different parts of the world, both chemically and clinically. The literature on this subject has accumulated to immense proportions during the past ten years, bringing to light new results of its usefulness. In China, Read and his co-workers have contributed much valuable data on its pharmacology (178).

Ephedrine has a chemical structure very similar to the potent principle of adrenalin extracted from the suprarenal gland. It stimulates the sympathetic nervous system; when taken by mouth it relaxes bronchial spasms; produces vasoconstriction and local decongestion when applied to nasal mucous membranes; it stimulates the respiratory centre; dilates the pupil without loss of light and accommodation reflexes; contracts the uterus; and increases the basal metabolic rate. The drug may also stimulate the central nervous system, and when by-effects occur they are largely due to such action. Ephedrine does not have any marked effect on body secretions; in older subjects, however, there may be urine retention. Investigators seem to agree that the prolonged use of ephedrine does not have cumulative effects and that it does not readily lead to habit formation. It has certain advantages over adrenalin in that it is quite effective when administered through the mouth; is very stable as it does not decompose by standing or on exposure to light; the action is much more prolonged, less intense and the toxicity low. Merck found in the European variety of *ephedra* an alkaloid isomeric with ephedrine which he called pseudoephedrine, and which was combined with homatrophine in the mydriatic mixture sold under the name of "Mydin."

Clinically, ephedrine is found to be of considerable value in the treatment of bronchial asthma, whooping cough, urticaria, and in the management of certain congestive nasal conditions, such as hypertrophic rhinitis and hay fever. It has a definite use in ophthalmoscopic work. It is also of value in spinal anaesthesia to sustain blood pressure at the normal level. Its beneficial action in shock and circulatory collapse is doubtful, and it has not proved useful in Addison's disease.

(177) K. K. Chen: *Ma Huang*, Chinese Materia Medica, China Med. J., Vol. 39, No. 11, 1925.

(178) B. E. Read: *Chinese Medicinal Plants*. Ephedra, 1930.

SINOMENIN

A very effective anti-rheumatic remedy put on the market by the Japanese during the past few years is Sinomenin. This is an alkaloid isolated by N. Ishinari from the root of *Sinomenin actum*, Rehd. et Wils. (*Menispermaceae*), a plant growing in the southern part of Nippon, which is used as a substitute for the original plant Fang Chi (防己) of China, where it has been used for thousands of years as a remedy for many diseases such as rheumatism, fever, etc.

The *Pen-Ts'ao* distinguishes two kinds of the plant, namely Han Fang Chi (漢防己) and Mu Fang Chi (木防己). The drug is a brown, bulky, amylaceous, tuberous root, split longitudinally into two or four pieces, and showing on its cross section something of the same radiated disposition of the vascular tissue as is met with in *Adenophora* and other of the *Campanulaceae*. The smell is agreeable, the taste bitterish and mucilaginous. It is used in fevers, dropsies, rheumatism and pulmonary diseases, and is also said to be diuretic. Among the prescriptions of Chang Chung-ching four contain Fang Chi. They are prescribed for dropsical conditions.

The Fang Chi alkaloid has been studied by Kondo, Kubota and others. Kubota made a collection of nearly fifteen specimens of Fang Chi from the markets of several cities in China and examined them, but by neither microscopic nor chemical examinations could he detect any difference between the two; while in many of the specimens an alkaloid "Tetrandrin" alone was found but no "Sinomenin."

A modern Chinese drug firm has prepared from Fang Chi a proprietary article for hypodermic injection called "Similan" as a substitute for the Japanese product. The effects are similar but the local reaction is sometimes more painful and intense.

MEDICINAL ALGAE

Tsao (藻) is the Chinese name for algae, which are valued by the Chinese both as an article of diet and as a medicinal agent. The *Pen-Ts'ao* mentions several kinds of this seaweed. Hai Tai (海帶), *Laminaria religiosum*; K'un Pu (昆布), *Laminaria saccharina*; Hai Tsao (海藻), *Sargassum siliquastrum*; and numerous other species of algae. *Rhodymenia*, *Iridoea*, and *Potomogeton* are found in the medicine shops, sold under the general term of Hai Ts'ai (海菜). In our grocery shops one may buy various forms such as Fa Ts'ai (髮菜), *Nostoc commune flagelliforme*; Hai Pai Ts'ai (海白菜); Yang Ts'ai (洋菜), a product of fine quality, which has been cleansed and bleached and imported from Japan; and others varying with the locality. When mixed with bouillon its sea-weedy taste is disguised and it forms a good ingredient of all kinds of soups. The old writers considered

a diet of seaweed as cooling, but rather debilitating if persisted in. Medicinally, it is used in the treatment of goitre and glands of the neck in general. *Laminaria saccharina* is recommended for all kinds of dropsies. *Laminaria religiosum* is prescribed in menstrual disorders and is said to have the power of increasing the action of the uterus in difficult labour. One of the seaweeds collected in the Saghalien river is highly prized as a remedy for bronchocele.

Read and Howe have made a chemical analysis of these different algae and found them to be remarkably rich not only in iodine but also arsenic, iron and lime, all elements of utmost importance to scientific medicine. The following table shows the results of their findings (179).

ANALYSIS OF CHINESE SEAWEEDS							
Algae	Chinese Name	Moisture %	Ca. %	SO ₄ %	As. pta. per million	I. %	Fe. %
<i>Laminaria saccharina</i>	昆布	27.3	3.32	1.93	26.0	1.234	0.0856
<i>Laminaria religiosum</i>	海帶	2.7	2.25	1.89	25.0	1.158	0.1494
<i>Hai Pai Ts'ai</i>	海白菜	29.2	1.08	10.55	0.2	0.212	0.1108
<i>Nostoc commune</i>							
<i>flagelliforme</i>	髮菜	—	2.56	0.23	0.2	0.142	0.2038
<i>Sargassum siliquastrum</i>	海藻	41.5	7.27	2.07	5.0	0.339	0.0923

It is common knowledge today how rich is the content of iodine in seaweed, which is the main source of our supply of commercial iodine and iodides. Yet because we eat it occasionally at a feast, and then in small quantity, and we know that altogether only a minute quantity of iodine has been ingested it is apt to be ignored or regarded as negligible. We know that an adequate supply of iodine is essential to the maintenance of normal health. It is interesting that Reid Hunt(180) in his work with acetonitrile found the iodine of the seaweeds about one hundred times as active as the iodine of potassium iodide, and Hunter(181) has shown us that a diet of seaweed increases the content of the thyroid glands. Possibly this is because it is more easily taken up by the lipoids and assimilated by the thyroid. The average daily amount of iodine required by the human body is 0.038 milligram. In his studies upon thyroxin, Kendall (182) has shown that his compounds can be administered at fortnightly or longer intervals and that the body has a storage mechanism which cares for the daily needs of iodine. It is possible that the monthly or occasional Chinese feast with its seaweed and other iodine food provides enough iodine to take care of the body's needs. As com-

(179) Read & Howe: *The Iodine, Arsenic, Iron, Calcium and Sulphur Content of Chinese Medicinal Algae*, Chinese Journal of Physiology, Vol. 1, No. 2, 1927.

(180) Reid Hunt and A. Seidell; J. Pharm. 1910-11, 2, 15-47.

(181) A. Hunter and S. Simpson: J. Biol. Chem., 1915, 20, 119-22.

(182) E. C. Kendall: J. Biol. Chem., 1920, 43, 149-59.

pared with the iodine content of ordinary foods, it is seen how superior algae are in this respect.

It is about 55 years since Macgowan(183) drew attention to the Chinese use of the shad fish and iodine containing plants in the treatment of consumption. Since that time we have heard much about the nature of the disease and of its scientific treatment, but it is generally agreed that the old empirical use of seaweeds in medicine was founded upon accurate observation of the real benefits derived therefrom.

With the helpful aid of the botanist it is possible nowadays to identify most of the material along the China coast. We have first the excellent list drawn up by Howe(184) and next the useful work done by Cowdry.(185) Plenty of Japanese literature upon sea foods is also available.

TOADS

Shakespeare in one of his plays writes thus of the toad:

"Round about the cauldron go;
In the poisoned entrails throw.
Toad, that under cold stone,
Days and nights has thirty one.
Swelter'd venom sleeping got,
Boil thou first i' the charmed pot."

The Chinese consider this animal as one of the "five poisons," the other four being the snake, scorpion, centipede, and black spider. On the fifth day of the fifth month it is the custom to sprinkle the floor with wine so as to expel these pests. The toad enters into the composition of most of the plasters used by old-style doctors. Its secretion, called Ch'an Su (蟾酥), is prescribed externally for the treatment of dog bites, carbuncles, boils, abscesses, ulcers and inflammations of all kinds. The chemical properties of this substance have been studied by investigators in many parts of the world. K. K. Chen, a well-known Chinese chemist now working in the Eli Lilly Research Laboratory in America, has recently isolated from the toad pure adrenalin and another substance named Bufagin which in pharmacological action is very similar to digitalis, exerting a beneficial effect in cardiac affections(186).

Ch'an Su is collected in the summer months, mixed with flour and other ingredients into cakes when it is ready for the market.

(183) D. J. Macgowan: Proc. N. China Br. Roy. Asiat. Soc., 1872, 7, 235.

(184) M. A. Howe: Forrey Bot. Club Bull., 1924, 51, 144.

(185) N. H. Cowdry: J. N. China Br. Roy. Asiat. Soc., 1922, 53, 158-88, Algae, p. 180.

(186) P. K. Liang: "Chinese Medicine", a pamphlet published by the Tientsin Press March, 1924, p. 30.

The best kind comes from Fung Yun and Yu Tien, near Peiping. There are three ways of collecting the secretion. (a) Prick the toad between the eyebrows to stimulate the secretion of the white substance. (b) Put the toads in a jar, the cover of which is studded with sharp bamboo needles. The toads, feeling the pain, will become angry and the skin will then be covered with slime which is collected for use. (c) Surround the toads with glass mirrors on all sides which will make them uncomfortable and they will pour forth their secretions.

It is a physiological fact that when a person is angry the suprarenal glands become active and secrete adrenalin into the blood stream causing a rise of blood pressure. Obviously the toad acts in a similar manner. Since this discovery, barrels of toads have been exported to foreign laboratories for the extraction of adrenalin and bufagin. When this substance makes its debut as a new medicine it may be predicted that a horrible time will set in for toads!

DEER HORN

The velvet horn of the sika deer occupies the same important place in Chinese medicine as in the old European pharmacopoeias. In Wotton's *Chronicles of Pharmacy*, under the heading "Dippel's Animal Oil," there is an account of the uses to which the hartshorn preparations were applied. Every young chemistry student today is familiar with the fact that ammonia was formerly distilled from the horns of the hart, hence the name spirit of hartshorn. The *Pen-Ts'ao* describes it as being sweet, warming and non-poisonous. It should not be smelt because it contains a very irritant insect. Stimulant, diaphoretic, antiperiodic, alterative and astringent properties are ascribed to deer horn. It is prescribed for a host of maladies: for vaginal bleeding, leucorrhoea, convulsions with feverish colds, nymphomania, spermatorrhoea, haematuria, enuresis, arthritis, backache, deafness, dimness of vision, vertigo, etc. It benefits the vitality and strengthens the mind; assists the growth of permanent teeth. It is a good tonic in all kinds of weakness.

The internal soft part of the horn is termed "Lu Jung," which after careful drying and powdering is made up into pills. The old pieces of horn are boiled and made into a jelly. This jelly made up into a kind of decoction with rice congee is taken as a general stimulant. Rice broth prepared together with deer's kidney is especially recommended for wasting diseases of the kidney. Various other preparations from the deer exist, such as the tincture, made by maceration of the powdered horns.

B. E. Read thinks that quite apart from simple calcium therapy recent studies upon the metabolism of iron and calcium suggest new

ideas with regard to methods of administration, absorption, deposition, assimilation and normal utilization of these basic substances in the building up of the body. Calcium is known to play an important role in the normal functioning of the ductless glands. Its assimilation is greatly facilitated by sunlight, or cod liver oil. It is natural to suppose that it is some particularly potent form of calcium which is responsible for the results obtainable by the administration of young deer horn(187). A case has been reported from Peiping of a cretin who was successfully treated with turtle shell, tiger bone and deer horn by an old Chinese herbalist. He only weighed 46 lbs. with a height of 39 inches though he was 17 years old. After six months of this treatment he gained 12 lbs. in weight and increased his stature by 3 inches. As at the same time he was given thyroid tablets it is difficult to judge whether the thyroid was responsible for the improvement or that the deer horn contains a very potent form of calcium which is easily assimilated(188).

Recently Professor Pavlenko of the All Union Fur and Hunting Institute, working on the spotted deer in the Maritime Provinces, Siberia, isolated from its antlers a substance which he named "Pantokrin." This, on analysis, shows the presence of an enormous quantity of male sexual hormone, a fact of great theoretical and practical interest for medicine. A number of outstanding Russian professors and physicians are now experimenting with the curative effects of this new substance. They find that this preparation has high curative value, raising notably the tone and vigour of the organism, improving heart action, eliminating fatigue and weakness of the heart muscle, hastens the healing up of abrasions especially when they have become infected and purulent, etc. Many patients who were given Pantokrin showed an increase in capacity for work, improvement of appetite, loss of apathy and nervousness; favourable results were also reported in diseases of the stomach and intestines. As a result of these researches and clinical findings, new ranches are now organized for the breeding of these spotted deer so as to provide sufficient Pantokrin for the treatment of ailing Soviet citizens(189).

ORGANOTHERAPY

In recent years a great variety of glandular substances, internal organs, sera and vaccines have been introduced into practice. Of these the thyroid, pituitary, suprarenals, pancreas, liver, stomach, placenta, and probably the ovary have indubitably established their

(187) B. E. Read: *Ancient Medicine*, Lecture given before the "Things Chinese Society" Oct. 26, 1926.

(188) *Journal of Endocrinology*, Vol. 6, p. 596, 1922.

(189) P. K. Liang: *Chinese Medicine*, a lecture delivered at the Union Church Literary and Social Guild, Tientsin, March 20, 1934.

therapeutic efficiency. It is remarkable to note that many of them have been used in China for ages past. The common practice of administering pig's kidney for backache, stomach for indigestion, lungs for consumption and cough, etc., may be too far fetched but the basic idea of endocrinology exists. As illustrative examples the following products may be mentioned.

Thyroid.—As early as the seventh century thyroid gland was prescribed for goitre and cretinism. The *Thousand Gold Remedies* give the preparation as follows: Take seven sheep's thyroid, dry in the shade; algae, dried ginger each 2 ozs.; *cassia*, *laminaria saccharina*, willow twigs, each 1 oz. Grind the ingredients into powder and make into pills. The *Medical Secrets of an Official* recommend steeping the glands in wine and afterwards roasting them. The dose is one gland daily.

Liver.—In 1926 Minot and Murphy reported on the beneficial effects in pernicious anaemia of a diet rich in liver. Since then numerous investigators all over the world have confirmed these findings. Li Shih-chen, the noted compiler of the *Pen-Ts'ao*, commented on this matter thus: "The liver stores blood and therefore is good for all diseases of the blood." It is prescribed for puffiness of the face, swelling of the feet and body, emaciation, beri-beri, spermatorrhoea, leucorrhoea, certain types of dysentery, and specially for eye troubles. Conjunctivitis, dimness of vision, night blindness, are thought to be favourably affected by a diet of liver. In view of the report of the Medical Research Council that pig's liver contains a great amount of vitamin A, B, C, D and E, it appears that the old empirical method of treating night blindness with liver is not without scientific foundation.

Stomach.—Ventriculin is the desiccated preparation of the stomach tissue offered to the profession by an American firm for the treatment of anaemia. In indigenous practice pig's stomach is recommended as a digestive tonic for emaciation and many kinds of weakness. It is also used for watery diarrhoea, beri-beri in the aged, scabies, ringworm and toothache due to caries.

Lungs.—Pig's lung is used in modern medicine for preparing the haemostatic remedy "fibrinogen." The *Pen-Ts'ao* says that it is sweet, slightly cool and non-poisonous. It is considered as a lung tonic good for coughs and weak lungs. A bamboo knife should be used in cutting it into slices. When cooked and flavoured with sesame oil it is eaten with congee. For haemoptysis associated with weak lungs it should be taken with barley powder.

CRYPTOTAENIA CANADENSIS

Perhaps the earliest Chinese drug that has won its way into Europe is Tang Kuei (當歸) or *Cryptotaenia canadensis*. As far

back as 1899 a German firm introduced it into western medicine in the form of a liquid extract under the name of Eumenol, and later in the form of tablets. During the past few years Chinese druggists have also begun to manufacture and sell them under the trade names of "Tancol" and "Jimenol."

Tang Kuei has been used in China for centuries as a sovereign remedy for menstrual disorders. It ranks next to licorice in frequency of use in prescriptions. It comes principally from the three western provinces, but is also prepared in Shansi, Shantung and Chihli. It is met with in the form of brown, fleshy root-stocks, branching and dividing into a mass of large, close, pliant rootlets, something like gentian root. The interior is soft, sometimes mealy, and of a whitish or yellow colour, or sometimes much darker. The odour is very strong, resembling that of celery, and the taste is sweetish, warm and aromatic. The drug is much used by medical men in China in the treatment of the menstrual, chlorotic, and puerperal diseases of women. It is used in haemorrhages of all kinds, colds, fluxes, dyspeptic complaints, ague, and a large number of other ailments. Its name is said to be derived from its asserted power to make the female "revert" to her husband, and much of its employment is probably to be referred to the wish of Chinese women to stimulate their generative organs, in order to increase their opportunities of bearing children(190).

This drug has been worked out pharmacologically more recently in the laboratories of the Peiping Union Medical College with the following results.

Extracts were prepared either by boiling the drug with water or by percolating it with diluted alcohol, the percolate being freed of alcohol and suspended in water for animal experiments. When an extract prepared in either of these ways was injected intravenously into dogs anaesthetized with ether, urethane, hydrated chloral, or phenobarbital (luminal), three effects were quite constantly produced:—

1. A fall in blood pressure, sometimes, but not always, followed by a rise.
2. Diuresis, which occurred no matter what changes in blood pressure were noted, and was sometimes very striking and prolonged.
3. Contraction of smooth muscles—uterus, intestines, bladder.

The action on the uterus.—Uterine contractions followed the injection of the whole or distilled extract in 10 out of 20 experiments on dogs anaesthetized with phenobarbital, urethane or ether. Of these 20 experiments, 16 were made on non-pregnant animals. All the 10 failures occurred in experiments on non-pregnant dogs, so that the drug caused contraction of the non-pregnant uterus of the dog in only 37.5 per cent of attempts, while in pregnant or recently

(190) Stuart, G.: *Chinese Materia Medica*, Shanghai, 1911.

delivered animals it was 100 per cent effective. While the number of experiments of the latter type was relatively small, the results suggest that Tang Kuei had a more constant stimulating action on the pregnant or recently evacuated uterus of the dog than on the non-pregnant or virgin organ.

In anaesthetized rabbits 0.1 or 0.2 mg. of a non-volatile sugar-free basic crystalline material caused powerful uterine contractions and a sustained rise in blood pressure; in one experiment on a pregnant animal, successive doses of 0.1 or 0.2 mg. each elicited a powerful uterine contraction, and when a total of 0.6 mg. was reached the contraction was strong enough to burst an amniotic sac.

Isolated rabbit uterus went into prolonged spasm in the presence of one part in two millions of these crystals.

Strips of human uterus, removed for fibromyoma, were stimulated by one part in 250,000. With either preparation, the effect disappeared on replacing the solution containing the drug with fresh Tyrode solution, and could be brought out repeatedly in the same preparation with no diminution in the effect.

Isolated rabbit gut showed an increase in rhythmic movements in the presence of one part of this material in 100,000. The action was not influenced by atropine, and could be brought out again and again by substituting fresh solution and adding more of the drug (191).

CHAPTER XIX

MEDICAL SECTS OF THE MING DYNASTY

In a previous chapter we touched upon the effects of religion on the social life and thoughts of the people and particularly its influence on medicine. In the Sung dynasty, the ethical and philosophical speculations of Chu Hsi (朱熹), the great Confucian scholar and his disciples, wrought some changes in the current medical views. In spite of all this, however, there appears to have been very little variation in the line of fundamental practice. The teachings of Huang Ti and Chang Chung-ching were still accepted as undisputed authority. But with the advent of the four famous doctors of Chin Yuan, several innovations were introduced into ancient theory and medical art became divided into many schools, presenting some analogy to the Empirics and Dogmatists of European times. The Ming doctors following in the footsteps of an awakened individualism began to express themselves. Unfortunately, most of them took the attitude of condemning previous writers as well as finding fault with one another. Gradually they developed into sects which may be grouped under five main headings.

1. *The Yang Yin Sect* (養陰派).—Its members were chiefly followers of Chu Tan-chi. They thought that the *Yin* principle was ever insufficient and should be nourished by tonics. Prominent among them were Tai Yüan-li (戴原禮), a pupil of Chu Tan-chi, who wrote the *Cheng Chih Yao Chueh* (證治要訣), *Cheng Chih Lei Yüan* (證治類元), *Lei Cheng Yung Yao* (類證用藥), etc. and Hsü Yung-ch'eng (徐用誠), Liu Ch'un (劉純) and others.

2. *The Wen Pu Sect* (溫補派) was diametrically opposed to the foregoing. This sect held that the *Yang* principle was most important. Hsüeh Li-chai (薛立齋), Chang Chieh-pin (張介賓), Chao Hsien-k'e (趙獻可) were some of the most ardent advocates of this view. According to Chang, the *Yang* principle was the essence of life. It was difficult to get but easy to lose and when once lost, it was hard to regain. Chao argued that the 'internal fire' was the vital force. He compared it to the gate of life which controls the body. Those who did not regulate it by allowing it to leak out would encounter sickness. It was believed that doctors frequently did not know how to nourish this fire but, on the contrary, killed it with cooling medicine.

3. *The Radical Sect* (攻下派), basing its principles on the theory that evil influences might be expelled and fevers reduced by appropriate measures, adopted an "attacking" policy. During the epidemic of Ch'ung Cheng 1644 A.D. which played great havoc in the provinces of Chekiang and Shantung, the methods of the Wen Pu Sect, which had prevailed up to that time, failed miserably. Wu Yu-k'ê (吳又可), the author of the famous book *On Plague*, employed saltpetre and other drastic measures with great success. He was one of the best exponents of the radicals.

4. *The Conservative Sect* (信古派).—A good many of the Ming doctors believed that the ancient medical literature had been lost or distorted by compilers and commentators. To restore it as far as possible to the original was their chief aim. Notable amongst them were Miu Hsi-yung (繆希雍) and Fang Yu-chih (方有執). The former thought that all ancient works had perished during the Burning of the Books of Shih Huang of the Ch'in dynasty, with the exception of Shen Nung's *Pen-Ts'ao* and therefore wrote the *Pen-Ts'ao Ching Su* (本草經疏), a work of 30 volumes. Fang Yu-chih, disputing Wang Shu-ho's arrangement of the *Shang Han Lun*, devoted twenty years of his life trying to bring it back to its original form and composed the *Shang Han Lun T'iao Pien* (傷寒論條辨).

5. *The Moderate Sect* (折衷派).—Ni Wei-te (倪維德) and Wang Ken-tang were two of the prominent moderates. They had no definite views of their own but selected all the good points from the different authors. Ni Wei-te wrote the *Yüan Chi Ch'i Wei* (元機啓微) while Wang compiled the *Cheng Chih Chun Sheng* (證治準繩), a voluminous work of 120 volumes embodying most of the teachings before the Ming period.

A short biographical sketch of a few of the leaders of the above mentioned sects is given below:

Tai Yüan-li (戴思恭字原禮), also named Sze-kung, was born in 1322 and died in 1405. A native of Kin Hwa, Chekiang, he studied under the famous Chu Tan-chi. The great master loved his brightness and ability and imparted all his medical knowledge to him. In course of time he became so well known that the Emperor Hung Wu (1368-1398) appointed him court physician and later promoted him president of the Imperial Medical College, which post he held for many years. Having attained a ripe old age he begged leave to return to his native land. The Emperor bestowed upon him some gold and ordered a messenger to accompany him home. He died at the age of 83. Except for the three books already mentioned he left no other writings behind. One of the best pupils of Chu Tan-chi, he perpetuated his master's teaching by a small work of 2 volumes with the appropriate title *Tui-Ch'iu Shih-I* (推求師意) or *My Teacher's Opinion*.

Chang Chieh-pin, alias Ching-yao (張介賓字景岳), hailed from Shan Yin. He was quiet and rather difficult to please. At the age of 13 he followed his father to Peking where he learned medicine from Chin Ying (金英). He liked to adopt the practices of Li Tung-yüan and Hsueh Chi and was ever ready to prescribe Shu-ti-huang (熟地黃) (*Rehmannia glutinosa*), considered highly as a tonic and useful in all wasting diseases and weakened conditions of the body. On this account he was often dubbed with the nickname Dr. Chang Shu-ti. At one time in his youth he served in the army but, failing to realize his aspirations, he resigned and took to healing as his life work. This military trait was seen throughout his writings for he was fond of comparing the treatment of disease with the strategy of war. He created the eight forms of therapeutics called Pa Chên (八陣) "battle array" or "army plans" and grouped his prescriptions under these headings, thus:

- | | | |
|--------------|------|--------------------|
| 1. Pu Chên | (補陣) | stimulant plan |
| 2. Ho Chên | (和陣) | truce plan |
| 3. Kung Chên | (攻陣) | attack plan |
| 4. San Chên | (散陣) | dispersal plan |
| 5. Han Chên | (寒陣) | cold plan |
| 6. Jo Chên | (熱陣) | hot plan |
| 7. Ku Chên | (固陣) | consolidation plan |
| 8. Yin Chên | (因陣) | reasoning plan |

He wrote a good many books, the most famous—the *Lei Ching* (類經)—being the result of forty years of labour. His grandson Lin Jih-wei (林日蔚) collected all his writings and published them in one set entitled *The Complete Works of Ching Yao* (景岳全書) in 64 volumes. A list of the titles is as follows:

- | | | |
|-------------------|--------|---------------------------------------|
| Chuan Chung Lu | (傳忠錄) | Records of Loyalty |
| Mo Shen Chang | (脈神章) | Principles of the Pulse |
| Shang Han Tien | (傷寒典) | Models for Typhoid |
| Tsa Cheng Mo | (雜證謨) | Plans for Miscellaneous Diseases |
| Fu Jen Kuei | (婦人規) | Rules on Midwifery |
| Hsiao Er Tse | (小兒則) | Regulations for Children's Complaints |
| Tou Chen Ch'üan | (痘疹詮) | Aphorisms on Smallpox |
| Wai Ke Ling | (外科鈴) | Bells of Surgery |
| Pen Ts'ao Cheng | (本草正) | Corrections on the Herbal |
| Hsin Fang Pa Chên | (新方八陣) | New Eight Army Plans |
| Ku Fang Pa Chên | (古方八陣) | Old Eight Army Plans |

Chang died at the age of 78 and had quite a large following. The Wen-pu Sect exerted considerable influence on the practitioners of the Ming and Ch'ing dynasties.

Wu Yiu-hsing (吳有性字又可) was a native of Chen Chai. His claim to leadership of the radical sect rested entirely on his *Discourse on Plague* (溫疫論). This little treatise consisted of only two thin volumes and was published in 1642. The title was misleading as it did not deal with plague but with epidemic fevers. Throughout the centuries all fevers were regarded as typhoid. Wu

pointed out this fallacy and made a distinction between these diseases. True typhoid, he remarked, was rare but most people treated fevers as such and consequently the results were poor. He further emphasized that the nose and mouth were important channels of infection.

Wang K'eng-t'ang (王肯堂字宇泰) graduated as Doctor of Literature in the 17th year of Wan Li (1589), and was some time councillor of Fukien. A scholar of no mean reputation, he nevertheless took a fancy to medicine. In his earlier days on account of his success in curing his own sister of a severe illness his fame soon spread to the whole village. So many came to him for treatment that his father, fearing that this might interfere with his studies for the competitive examinations, sternly forbade him to practise. However, after his graduation he reverted to his old ambition and became a prodigious medical writer. His *Cheng Chih Chun Sheng* (證治準繩) or *Principles and Practice of Medicine*, a stupendous work of 120 volumes corresponding to the modern systems of medicine, was considered a standard book. It was completed between 1597-1598. At first it consisted of only eight books; later under the same title more material was added from time to time. In 1604 the *Shang-Han Chun-Sheng* (傷寒準繩) or *Principles of Typhoid*, 8 books, and the *Yang-I Chun-Sheng* (瘍醫準繩) or *Principles of Surgery* were added. In 1607 the *Yiu-K'e Chun-Sheng* (幼科準繩) or *Principles of Children's Diseases*, 9 books, and the *Fu-K'e Chun-Sheng* (婦科準繩) or *Principles of Women's Diseases*, 5 books were further added to complete the set. The last named under the title of *Chi-Yin Kang-Mu* (濟陰綱目) in 16 volumes was published by Wu Chi-wang as a monograph.

Wang K'eng-t'ang was a moderate in the true sense of the word. He had no pet theories to advance nor special forms of treatment to advocate. With a judicial mind he picked out the best from the leaders of each school and presented to the profession a comprehensive and balanced view of medicine as a whole.

A landmark in the annals of Chinese medical history was the appearance of the *I-Shih* (醫史), a special treatise on the history of medicine. The author was Li Lien (李濂字川父), also named Ch'uan-fu, a native of Ch'ang Fu—born in 1488. In the 8th year of Cheng Teh (1513) he came out first in the village competitive examination and the following year graduated as Doctor of Literature. He was assigned to the post of prefect of Mien Yang, later transferred to Ningpo and lastly promoted to senior assistant at Shansi. In his youth he was one of the smart set and frequently went out hunting and drinking, thus leading a life of wild pleasure. One day he composed an *Ode to Reason and Feeling*. His friend, Tso Kuo-chi, showed it to Li Meng-yang who thought so highly of it that he came

to seek the author. In the 5th year of Chia Ching (1526), while only 38 years of age, he retired to his native place and made further studies in literature. Thus he lived for over forty years in the country, wrote extensively and was known as a classical scholar.

It is said that the earliest work on medical history was Kan Paitung's *Names of Famous Physicians* (甘伯宗歷代名醫姓名) (923-936) (192). This book only existed in name. We have no way of finding out what it was like excepting that it consisted of 7 volumes and enumerated the names of 120 physicians from the time of Fu Hsi down to the Later T'ang dynasty (193). Li Lien's *Medical History* was therefore the first monograph. In the opinion of the *Szu K'u T'i Yao* (四庫提要醫家類), it was a poor composition from the standing of literary merit as compared with other works by the same author. Nevertheless, when viewed as a medical contribution it is in a class by itself for books on this subject were extremely few. This work consisted of 10 volumes and contained the names of 65 persons. The subject matter of 55 of them was taken from different histories and 10 from current literature. As no proper biography of Chang Chi, Wang Shu-ho, Wang Li, Tai Yuan-li and Ko Ying-lei was found, Li Lien compiled these himself. After each account a critique was given. It appeared that he was not very careful in his choice of material nor strictly accurate in his comments. However, he made a significant remark not alluded to by previous writers. He said that even such skilful physicians as Tsang Kung produced only five girls and no boys, while Kung Cheng Yang Ching, his teacher, had no son though seventy years old. Evidently these masters had failed to evolve a method of procreating any male issue themselves!

(192) 李濟世界醫學史 Li T'ao: *World Medical History* (in manuscript).

(193) 多紀元風醫籍考 Taki Mototane: *Catalogue of Chinese Medical Literature*, Vol. 8.

CHAPTER XX

CULTURAL ASPECTS OF THE MEDIAEVAL PERIOD

Since very remote times, the practice of medicine has been divided into a number of branches which themselves have been defined with greater or less precision at various periods. The Chou dynasty distinguished four branches, the T'ang dynasty, seven, and since the Sung dynasty, usually thirteen(194). These distinctions, however, were not accurately adhered to by different writers as will be seen from the following table.

<i>Sung History</i> 宋史	<i>Lei Ching</i> 類經	<i>Hsiao Chih Lu</i> 小知錄
1. Wind diseases	Diseases of adults	Diseases of adults
2. Typhoid fever	Diseases of children	Miscellaneous complaints
3. Diseases of adults	Women's diseases	Diseases of children
4. Women's diseases	Typhoid fever	Wind diseases
5. Obstetrics	Ulcers	Obstetrics
6. Acupuncture and moxa	Acupuncture and moxa	Women's diseases
7. Throat	Eye diseases	Mouth and teeth
8. Mouth and teeth	Mouth and teeth	Throat
9. Ulcers	Throat	Bone-setting
10. Bone-setting	Bone-setting	Wounds
11. Wounds	Wounds	Ulcers and swellings
12. Conservation of life	Massage	Acupuncture and moxa
13. Praying cures	Praying cures	Praying cures

Medicine in the Yuan dynasty was similarly split up but here again we find a lack of uniformity among different authorities. Thus the *Cho Keng Lu*(195) gives the list as (1) Diseases of adults; (2) Miscellaneous diseases; (3) Diseases of children; (4) Wind diseases; (5) Obstetrics; (6) Women's diseases; (7) Eye diseases; (8) Mouth and teeth; (9) Throat; (10) Bone-setting and wounds; (11) Ulcers and swellings; (12) Acupuncture and moxa; (13) Charms and incantations; while the *Medical History* has it thus: (1) Diseases of adults; (2) Miscellaneous diseases; (3) Diseases of children; (4) Wind diseases; (5) Obstetrics; (6) Eye diseases; (7) Mouth and teeth; (8) Throat troubles; (9) Bone-setting; (10) Wounds; (11) Acupuncture and moxa; (12) Charms and incantations; (13) Chin K'e or forbidden subject(196).

(194) The *Heilan Chü Chih* 選舉志 gives only three branches, namely internal diseases, acupuncture and external diseases.

(195) *Ch'o Keng Lu* 輟耕錄

(196) Chin K'e 禁科. What this indicates none seem to have an idea. See also Dudgeon's *The Great Medical College at Peking*, Chinese Recorder.

The Ming dynasty followed the Yuan but with a slightly different version. The divisions were: (1) Diseases of adults; (2) Diseases of children; (3) Women's diseases; (4) Ulcers and inflammations; (5) Acupuncture and moxa; (6) Eye diseases; (7) Mouth and teeth; (8) Bone-setting; (9) Typhoid fever; (10) Throat troubles; (11) Wounds; (12) Massage; (13) Charms and incantations (197). The list from the *Institutes of the Ming Dynasty* proposes to enumerate thirteen but concludes by only naming eleven as follows: (1) Diseases of adults; (2) Typhoid fever; (3) Diseases of children; (4) Women's complaints; (5) Mouth and teeth; (6) Throat troubles; (7) Surgery; (8) Bone-setting; (9) Smallpox and measles; (10) Diseases of the eye; (11) Acupuncture and moxa. Cheng Shao-wu gave the opinion that massage and incantations were dropped out of the list because these two subjects had become 'lost arts.'

An historic event of the mediaeval period was the founding of the T'ai I Yüan (太醫院) or College of Imperial Physicians, which dates from the Yuan dynasty. In former times the medical establishment was called Yü Yao Chü (御藥局) or Imperial Drug Bureau, a minor department under the Court of Sacrificial Ceremonies. The College of Imperial Physicians was the first independent medical institution, properly organized and vested with definite administrative powers. The main functions were stated to be "to direct all medical matters, to dispense medicines for the Imperial Household and to supervise the work of the medical officers." It appears that the government regarded the profession very highly for hitherto the officials put in charge of such institutions had been of comparatively low rank—between the 7th and 9th grade—but now officials as high as the 2nd grade were appointed. The power of the College was also extensive with the following departments or bureaux under its jurisdiction:

- (1) *Kuang Hui Szu* (廣惠司). A special department for preparing Mohammedan drugs for the Imperial Court.
- (2) *Yü Yao Yüan* (御藥院). To receive and keep in stock all expensive drugs sent in as tributes from vassal states.
- (3) *Yü Yao Chü* (御藥局). A storehouse where all ordinary drugs were kept.
- (4) *Heng Yü Yao Chü* (行御藥局). To look after medical supplies for emergency.
- (5) *Tai Tu Hui Min Chü* (大都惠民局). To collect taxes for buying and preparing medicines for the poor.
- (6) *I Hsüeh T'i Chü Tzu* (醫學提舉司). To examine the teaching material of the doctors, to select teachers for the College, to test the properties of drugs, to train the sons of

(197) 明史職官志 *Official Repertory, Ming History.*

court physicians, to edit and annotate medical literature, and to supervise medical schools.

- (7) *Kuan I T'i Chi Szu* (官醫提舉司). To attend to all medical law-suits.

The personnel of the College consisted of one director of 2nd grade rank, two co-directors of 3rd grade, two senior assistants 3rd grade, two junior assistants 4th grade, two junior assistants 4th grade, two associates 5th grade, two chief secretaries and two assistant secretaries, all 7th grade, four clerks 8th grade and a number of writers, translators, interpreters, keeper of seals, etc.

In course of time the College declined until under the Ch'ing dynasty it practically ceased to function. J. Dudgeon who paid a visit to the place in 1869 gave a vivid description of it in these words:—

"The buildings are in the worst repair—all is ruin and only a few rooms are at all habitable. The bricks of the floors, the window beams, rafters, doors, tiles have all been torn away, where accessible, by the ruthless hand of poverty. Pigs and squalid children now frequent the old hall, class rooms and quadrangles. Behind about twenty families are housed in the old quarters of the students and under-officials and in the centre of the yard a large mound twenty to thirty feet high has gradually risen by the accumulated ashes thrown out. Dust, dirt and desolation reign supreme. Ichabod is everywhere inscribed. In the second court on the North side is a small room with *I Hsüeh* 醫學 on a tablet above the door. On the window are official notifications of the subjects for essays on the five departments specified. On the first and fifteenth of each month two of the officials, teachers (6th button) attend to give out the subjects and there are other two of the same rank (the highest usual rank in medicine is a 5th button and for extraordinary services rendered or some wonderful cure, sometimes a 3rd is bestowed). China is not behind the more civilized countries of Europe in showing disrespect to medicine and curtailing or niggardly granting state honours and pay.

"There are about 70 applicants desiring to be placed on the roll of 30 who receive a small pittance *on paper*, two mace *per diem*, from the Imperial Treasury. This is the nominal sum, but I cannot learn how beautifully less it becomes before it reaches the students. The list of favoured ones is continually changing according to the merit of the essay. No oral instruction is given—the college possesses *one volume*, which they refuse to exhibit. It is a volume of the *Golden Mirror of Medicine* 醫宗金鑑. This medical learning or school was commenced in the reign of Tan Kwang in the year 1839. It had existed in the Ming dynasty, but had long since fallen into disuse. A few years after its re-establishment, an official—a relative of the Emperor named *I Chu* 奕紀 abolished it to save expense. Thus it existed up to the 5th year of Tung-chih (1866) when a censor Hu Ch'ing-yüen 胡慶源 memorialized the Emperor; an edict was issued and instruction as above indicated was begun. This memorial appeared in the Peking Gazette 14th January 1866, and was translated by M. C. Morrison Esq., late H.B.M.'s Consul at Chefoo, and was published in the Report of the Peking Hospital for 1865. It recommended periodical examinations similar to those of the Imperial Academy. The class of men in the College is thus described by the censor: 'Some there are who having never read the writings of the ancients and whose science consists in nothing more than an acquaintance with some stock prescriptions, in trying experiments with their medicines on sick people, and in attempting to cure mild diseases, superinduce on them malignant ones. They know not how to distinguish between appearance and reality, nor

between the effect of heat and that of cold. They act on no principle, and at random, and generally make bad worse. Should such men be called to do duty in the palace, very serious consequences (to the health of the imperial family) might ensue'. The Emperor taking a hint from this shrewd censor probably, has prohibited acupuncture—their hitherto *panacea* for all ills—upon his person. In the hands of such anatomically ignorant and reckless quacks, it is extremely dangerous and ought to be banished. Any one who chooses to present his name with the requisite offerings of gold, silver or even fruit, is received as a member of the Imperial College of Physicians, and any one who has read a medical book or inherits or has bought a medical manuscript is sure of becoming a fellow of the said College, with a handsome pay! Those attending directly on the court receive as salary twenty-six taels per annum and twelve hundred catties of rice. The subordinates, thirty in number, receive twelve taels and five hundred catties of rice" (198).

In 1921 E. V. Cowdry of the Peking Union Medical College visited this College of Imperial Physicians and reported that there were 110 physicians registered. Two of them attended the deposed Emperor Hsuan Tung twice a week and wrote prescriptions if necessary. After the establishment of the Republic when the Nationalists came into power it was abolished.

Ever since the introduction of Chinese medicine into Japan in the Ch'in and Sui dynasties, its sway over the latter country was unbounded. The students sent to China had duly returned and advocated Chinese institutions and learning. Buddhist priests also had a share in bringing about the change. Translations of Chinese medical books became the order of the day. In 982 A.D., Yasuyori Tamba (丹波康賴) wrote the *Ishin Ho* (醫心方) which was chiefly a commentary on the *Pin Yuan Hou Lun* (病源候論) by Chao Yuan-fang. This is said to be the oldest Japanese work in existence. Other books of the T'ang and Sung periods, such as the *Chien Chin Fang* (千金方) *Sheng Hui Fang* (聖惠方), *San Yin Fang* (三因方), *Pai I Fang* (百一方) and the *He Chi Chu Fang* (和劑局方), were also much esteemed.

The new teachings of the Chin Yuan doctors had a similar influence in Japan. Fujikawa says: "An essay by the medical scientists of the Chin and Yuan periods of China was held in esteem by our medical men at this time for the reason that the treatment of pathology was different from that of the T'ang period which preceded these two. In the T'ang period the main causes of diseases were considered pneuma and cold, but according to the Chin Yuan School of medicine, the causes of diseases were classified into the external and the internal: such as moisture and heat for the former and constitution, malnutrition, emotion, and overwork for the latter.

(198) J. Dudgeon: *The Great Medical College at Peking.*

For the treatment of these diseases mild drugs were usually given" (199).

During the Ming dynasty, among the many who came to China to study the classics, there were not a few who took up medicine, the most prominent of them being: Shokei Takeda (竹田昌慶), Jo-un Saka (坂淨運), Gekko (月湖), Sokei Yoshida (吉田宗桂), Shigehiro Kanamochi (金持重弘), Moyshin Wage (和氣明親) and Sanki Tashiro (田代三喜). These men upon their return to Japan gained fame either through writing books or spreading the knowledge of Chinese medical art in other ways. They were known as the Li-chu School of medicine (李朱醫學) (200).

One of the most famous practitioners of the time was Dosan Manase (曲瀬道三) (1508-1595 A.D.), a pupil of Sanki Tashiro, who acquired a profound knowledge of Chinese medicine. He opened a private school in Kyoto and wrote many books. He was called the "Reviver of Medical Science." The Li-chu teachings prospered and were further developed by such men as Gensaku Manase (曲直瀬玄朔), Soha Hata (泰宗巴), Zenso Seyakuin (施藥院全宗), Seirin Manase (曲直瀬正淋), Genya Okamoto (岡本玄治), Gentaku Noma (野間玄琢), Gentetsu Inoue (井上玄微), Doju Nagasawa (長澤道壽) and Genshin Yamawaki (山脅玄心). But when the philosophy of Chu Hsi, which had been in vogue during the early part of the Tokugawa Period, was rejected, a return to the ancient school was advocated. It was argued that as a reversion was made in the Confucian classics, medical science should at the same time be restored to the ancient teachings of Chang Chung-ching. Gen-i Nagoya (名古屋玄醫) was the first to advance this view. After him came Gonzan Goto (倭藤艮山), Shu-an Kagawa (香川修庵), Toyo Yamawaki (山脅東洋), and under such strong supporters, the ancient medical art was revived, maintaining a high level until it was superseded by Dutch medicine (201).

Whether syphilis existed in China in ancient times or was introduced from other countries at a later period is a subject of discussion. But the fact is certain that it must have been quite prevalent in the Ming dynasty for all the writers of that era gave full descriptions of the scourge. The year 1505 was stated to be the date of its first appearance and Canton the place of origin. This seems probable for the Cantonese began to have commercial intercourse with the Portuguese in the fifteenth century. It is significant

(199) Li Tung-yuan and Chu Tan-chi were two of the four famous doctors of Chin Yuan.

(200) Fujikawa: *Outline of the Medical History of Japan*, p. 14.

(201) Fujikawa: *Outline of the Medical History of Japan*, p. 17.

that prior to this date there was no mention of the term syphilis in any of the medical writings but after that time there were copious references to it. The following books published during the Ming dynasty contain definite accounts of the disease:

- The Teachings of Tan Ch'i* 丹溪心法 1536, Vol. 16.
Surgical Treatment 外科心法良方, 1556.
Ancient and Modern Medicine 古今醫統, 1557.
Synopsis of Medicine 醫學綱目, 1564.
Complete Book on Wounds and Swellings 瘡瘍經驗全書 1569, Vol. 5.
Introduction to Medicine 醫學入門, 1576, Vol. 7.
All Diseases Return to Spring 萬病回春 1587, Vol. 5.
Principles of Surgery 瘍科證治準繩, 1608, Vol. 5.
Complete Works of Ching Yao 景岳全書, 1610 (?), Vol. 62.
Fundamentals of Surgery 外科正宗, 1617, Vol. 41.
Secret Memoirs on Foul Sores 微瘡祕錄, 1632.

The origin of spectacles in China is another theme for controversy. Some contend that such were mentioned as early as the Ch'in dynasty 1107-314 B.C., others point to two references in 209 B.C. in which it is stated that Premier Chen P'ing under Emperor Han Kao Tsu was suspected to have *Chin Mu* (金目) by his sailors when he crossed the river to the country of Chu(202); and Huai Nan Tzu said one had to be taught to use *Chin Mu* in order to see near and far distance well(203). What this *Chin Mu* really is has yet to be discovered but it was conjectured to refer to the spectacles of to-day. It was not until the Sung dynasty, 960-1090 A.D., that more definite data came to light. The *Tung Tien Ching Lu* recorded that old people who could not read small print were able to do it with *Ai Tai* (眼鏡) (204). Chang Tzu-lieh of the Ming dynasty stated that this term meant spectacles. In the novels and literary jottings of the Ming and Yuan dynasties, mention was frequently made that *Ai Tai* was imported into China from the West. It was also claimed by some that the Jesuit fathers brought spectacles into China during the reign of Wan Li (1573-1619). This was only partly true for there were numerous references pointing to their use before this time. Anyhow it was in the Ming dynasty that spectacles became common(205).

While the germ of the hospital idea may have existed in China from the earliest times the development of such establishments had never been marked and they could not be compared with those of Europe or America which were organized on an elaborate and extended scale. The Chinese hospital, if such it may be called was more of the nature of a benevolent institution where there was very

(202) 陳丞相世家 *Family History of Chen P'ing*.

(203) 淮南子 *Huai Nan Tzu*, Vol. 20.

(204) 洞天清錄

(205) For further information on this subject see H. T. Pi: The History of Spectacles in China, *China Med. Jl.* Oct. 1928.

little medical attention or trained nursing. The patients were looked after by their own relatives or friends and were at liberty to do anything they pleased. Indeed, the hospital was a symbol for charity, and so deep-rooted is the idea that even now no respectable person with means, unless absolutely obliged to, will go to a hospital. However, a few accounts of the institutions that bear some resemblance to modern hospitals were found in the dynastic histories.

In the first year A.D., an edict of the Emperor Han Pin was to this effect: "All infected persons should be sent to empty outhouses where treatment will be provided. Burial expenses will be given at the following rates: two deaths in one family 1,000 cash; four deaths in one family, 3,000 cash; six deaths in one family, 5,000 cash." Again the *Sui History* records that when Sun Kung-yi was prefect of Min Chow it was the custom of the place to abandon the sick. If one member in a family was infected the rest would flee. Even father and son, husband and wife, would not take care of each other and, as a result, most of the sick died. Sun Kung-yi ordered his subordinates to gather in the sick in the district and transport them with beds and carriages to the great hall in his own house. In the summer months, when an epidemic was raging, sometimes hundreds filled the courtyard. He personally attended them, spending his entire income to buy medicines and to engage physicians to treat the sufferers (206).

In the *Nan Ch'i Annals* two references to hospitals were given. The crown prince Hui Wen and prince Ching Ling were both great admirers of Buddhism. They organized the "Six Disease Kuan" to take care of the poor. Prince Ching Ling founded a "*Hai*" to the north of his palace for the sick poor. He clothed them and gave them medicine (207).

The *Wei Annals* and the *Old T'ang Annals* mention two interesting documents which read: "There are orphans, widows and sick poor in the country and we do not take care of them. Is this our true intention in thus being the father and mother of the people? Therefore be it ordered that the Master of the Grand Banner shall establish a hospital in some suitable place and send all the suffering people there. Be it further ordered that the Medical Bureau shall assign doctors to treat them. Examinations will be held on the work of these physicians and promotion made according to the results shown." *Royal Proclamation dated October, 3rd year of Yung Pin (60 A.D.)* (208).

(206) 隋史 *Sui History*.

(207) 南齊書惠文太子傳及竟陵王傳

(208) 魏書 *Wei Annals*.

"Convalescent Homes were founded during the T'ang dynasty, But on account of the great number of priests throwing up their ecclesiastical orders, too few being left to look after the needs of the patients, the government found it necessary to assign a portion of the rice fields belonging to the temples to keep up these institutions. From seven to ten acres were taken from each province and an elderly person of that district was selected to take charge." *Decree of Hui Chang dated November, 15th year (845 A.D.) (209).*

Coming to the Mediaeval Period we find that these charitable institutions became numerous. It may be noted that in the Sung dynasty public officials were very energetic in establishing free clinics and the co-operation of the people was sought in this work. Thus the *Sung History* records that in August of the first year of Ning Yuan (1102 A.D.), Safety Refuges for the sick poor were organized in every province. When Fu Pei-cheng was prefect at Changchow he founded the Benevolent Institute for sick people to counteract the prevailing custom of expelling devils in treating patients(210). Huang Ying, the prefect of Ying Chow, established a Safety Retreat to house the poor patients. The interest of an endowment fund was used for its maintenance(211). Su Shih, when prefect at Hangchow, said that this city being the terminal of land and sea routes, deaths from plague must be more numerous than in other places. He collected two thousand dollars from others and subscribed fifty ounces of gold himself to organize hospitals, appointing doctors and servants to dispense food and medicine to the people(212).

Similar accounts may be found in the *Chin and Yuan Histories*. It is stated that in August of the 2nd year of Tai Shing the Benevolent Bureau was created. Several court physicians were appointed to direct the work and two old doctors of literature were selected to look after its management. Patients were treated free(213). The Benevolent Dispensary was founded during the Yuan dynasty. The government appropriated a fixed revenue for its support, the interest

(209) 舊唐書 *Old T'ang Annals*.

Buddhism was introduced into China about 85 A. D. and was very flourishing in the Han and T'ang dynasties. It is estimated that up to the time of Wen Chung (827 A. D.) there were more than 40,000 temples and several hundred thousands of monks and nuns. These Homes for the Sick were at first entirely managed by priests. In 845 A. D., however, Emperor Wu Chung ordered all the temples in the country to be demolished. About 27,000 monks and nuns were thus compelled to return to ordinary life. As a result these Homes were deserted until re-organized by the above mandate.

(210) 宋史 傅伯成傳

(211) 宋史 黃贊傳

(212) 宋史 蘇軾傳

(213) 金史 高宗紀

of which was used to buy medicines. Skilful doctors were appointed to take charge of the Dispensary and treat the patients(214). Hospitals were started in the capital and in the ten provinces in 985 A.D. They were maintained by funds derived from rice fields granted by the government and under the charge of court physicians. But in 1292 A.D. the work was discontinued because of loss of revenue, until 1299 when it was re-established by the Emperor Ta Teh. Two doctors were appointed to each of the larger hospitals and one doctor to every smaller hospital. The amount of revenue appropriated was based on the population of the district(215).

The old-time physicians never organize themselves. There are no medical societies for mutual improvement. Medical ethics, therefore, receive scant consideration. Nevertheless, there are current rules laid down by ancient writers, which the regular practitioners sometimes adopt for themselves. An example of such is given in a work of the Ming dynasty. It is entitled the "Five Don'ts" (五戒):—

1. Don't make any unnecessary delay when called to see a patient, be he poor or rich. Give the required medicine whether he pays you or not. There will be some one to recompense you for your kindness.

2. Don't see a girl, a widow, or a nun without the presence of another person. In a private case, examine carefully and never speak of it even to your wife.

3. Don't substitute any precious ingredients, such as pearls or amber, entrusted to you in preparing the medicine. It is better to tell the patient to compound these himself so as to avoid suspicion.

4. Don't leave your office during working hours nor go to picnics, excursions or drinking parties. Attend to your patients in person and write your prescriptions clearly and carefully.

5. Don't entertain any impure thoughts when you are called to see a prostitute or some person's mistress. Treat them as one from a good family. Leave them as soon as your duty is done and do not call again unless sent for(216).

Other distinct features of this period are the discovery of inoculation against smallpox, the establishment of medical schools, the holding of state medical examinations, important contributions to materia medica and the formulation of a system of medical jurisprudence, all of which will be fully described at the end of this book.

(214) 元史食貨志

(215) Most of the above material is taken from K. C. Wong: *Chinese Hospitals in Ancient Times*, China Medical Journal, Jan. 1923.

(216) 陳實功外科正宗

CHAPTER XXI

DECLINE OF THE NATIVE PRACTICE

A decline of Chinese Medicine was perceptible from the Ming dynasty reaching its lowest ebb in the Ch'ing period. Struggling under the yoke of an alien race, the scientific advancement made naturally could not be compared with that of other periods. This downward trend finds its most decided expression in the lamentable condition of instruction. Whilst under the T'ang and Sung dynasties medical schools flourished throughout the empire, there existed now only one Imperial College of Physicians in Peking, whose sole function was but to train physicians for the Imperial family. The ordinary practitioners have no facilities to prepare themselves for their work. There is no attempt at government supervision. It is, as Morse aptly puts it, "one grand free-for-all profession, with no registration or code of ethics whatever"(217). Anyone can set up as a doctor. A labourer who inherits a few prescriptions from his ancestors, or an old woman who has had some experience from rearing her children, will put up a sign-board and start practice. Going a little higher we find a class of men who are too lazy or too weak for manual labour, or are not educated sufficiently for literary work; for a few months they ransack some old medical books and then take to medicine to earn a means of livelihood. In the higher grades of practice an apprenticeship is served either under an old doctor, or in a druggist shop, to enable the beginner to pick up some knowledge of medicine before he commences practice. Most confidence is placed in those who spring from medical families, or those who can point to the largest number of professional ancestors"(218). Hence the saying, "Do not take medicine prescribed by a doctor who is not backed by the experience of three generations."

A second cause for the decline of the native practice was the dissension within its own ranks. When a house is divided no progress can be expected and this is also true of the medical profession. In the dynasty under review numerous divisions and sects sprang up. There were those who advocated the orthodox teachings of the Han,

(217) Morse: *The Three Crosses in the Purple Mists*, p. 125.

(218) K. C. Wong: *Status of the Medical Profession in China*, China Medical Journal, Aug. 1924.

the T'ang, the Sung, the Chin Yuan or the Ming periods respectively. The bolder spirits branched out into new fields and formed new cults by themselves. Their views were so divergent that it is very difficult to classify them. Broadly speaking, they may be divided into two main schools—the ancient and the modern. Men like Yü Chia-yen, Ko Yun-pai, Chang Yin-an, Kao Shih-ts'ung, Hsu Ling-tai, Chen Hsiu-yüan and Huang K'un-tsai urged the return to the old classics of Huang Ti and Chang Chung-ching; while Yeh Tien-shih, Hsüeh Sheng-pai, Yu Shih-yu, Wu Chü-t'ung, and Wang Meng-ying favoured the teachings of the modern masters. But apart from these two there were so many outstanding figures, each having a train of followers, that they eventually fell into smaller cliques. Seven such cliques may be distinguished (219).

1. Yu Chia-yen discarded the traditional arrangement of the *Shang Han Lun* by Wang Shu-ho and developed a new style of commentary on the classics. His work on the *Principles of Medicine* was a model of its kind being widely quoted by subsequent authors. Hsü Chung-ke and Yin Tsai-ching adopted this style in their writings.

2. Chang Shih-wan revived the use of mild tonics first employed by Hsueh Chi and Chang Ching-yo of the Ming dynasty. This form of treatment had fallen into disrepute due to the craze for more modern remedies as advocated by most of the practitioners of the Ch'ing period.

3. Ko Yun-pai concentrated his energies upon a study of the *Shang Han Lun* and did much to clear up many doubtful points in the text. Chang Yin-an and Kao Shih-t'sung were his contemporaries.

4. Yeh Tien-shih was one of the most celebrated physicians of his time. He introduced the use of aromatic stimulants in the treatment of epidemic fevers with great success. His fame rested more on his personality and clinical experience than on his academic knowledge for he left no books behind. An acknowledged master of the modern school he had a large circle of admirers.

5. Hsu Ling-tai was a well known author and clinician. His fertile pen touched on every branch of medicine. He discoursed on the *Nei Ching*, *Shang Han*, *Chin Kuei*, and *Nan Ching* and corrected many mistakes in these ancient classics.

6. Chen Hsiu-yüan, a prolific writer of the Ch'ing dynasty, was very popular with beginners. He made medicine easy for the masses compiling a series of books for this purpose. He was in a class by himself.

7. Wang Kim-tsai wrote in excellent literary style. He thought so highly of himself that he viewed all previous writers with con-

(219) 中國醫學史 *Chinese Medical History*, pg. 102.

tempt. His teachings were too prejudiced, being more theoretical than practical.

Chinese medicine received a further setback in the early part of the nineteenth century when it came into contact with the occidental art. Its introduction, development and subsequent adoption by the Government as the official system will be fully dealt with by my co-author Dr. Wu Lien-teh in Book Two. Here it is sufficient to point out that whilst hitherto Chinese healing art only concerned itself with internal sects and cults now it has to face an entirely different situation. The profession gradually divided into two big camps—the conservative and the liberal. The former condemned and the latter favoured the new medicine. And out of this there arose a third group, the so-called Anglo-Chinese Group (會通派), which professed to harmonize the old and new teachings. Tang Yung-chuen and Teng Li-hang were two prominent representatives of this cult. This state of confusion was getting progressively worse in the latter part of the Manchu regime. Formerly the differences between the sects were chiefly on doctrinal difficulties but now therapeutic disagreements formed the subject of dispute. Geographical factors were at the same time brought into play dividing the profession into North and South. The northern school represented by Yu Chia-yen, Ko Yun-pai, Chang Yin-an and Hsu Ling-tai prescribed strong drugs and big doses. The Shantung and Chihli doctors followed this practice. The southern school represented by Yeh Tien-shih, Hsueh Sheng-pai, Wu Chū-t'ung and Wang Meng-ying preferred milder substances and smaller doses. Those around Kiangsu and Chekiang took to this course. Besides the above, the regular doctors had to compete with fortune tellers, medicine vendors, fakirs, mediums, palmists, astrologers, sorcerers, magicians, fairy doctors, street dentists, acupuncturists, masseurs, bonesetters, monks, taoists and a host of other quacks who strove with one another in preying on the ignorance and credulity of the public, resulting in the present chaotic conditions.

After the Sino-Japanese and the Russo-Japanese Wars, China was rudely awakened to the fact that she was far behind the times especially in the matter of guns, battleships, industries, government, organization, scientific achievements, etc. In order to cope with these new problems a reform movement was put on foot and sweeping changes were initiated in every field. As education was considered the key to a solution of these difficulties the old competitive examinations were abolished and new-style schools and colleges were substituted. Imbued with the doctrines of "the struggle for existence" and "the survival of the fittest," etc. the more enlightened of its

members began to establish medical schools (old-style) with the object of training the younger generation for the profession.

The earliest attempt of such a nature appeared to be the Chengtu Medical School, Szechuen, which, according to its own statement in answer to a questionnaire sent out by the Medical Research Society, was opened in 1906. But the first proper school was the Shanghai Medical School, founded in 1917 by Dr. Ting Kan-jen, a prominent native practitioner of Shanghai. It was registered at the Shanghai magistracy and filed for record at the Ministry of Interior. This institution continued for a number of years and many of its graduates became well known in medical circles later. In 1915 Dr. Sung Ta-jen made a survey of the existing native medical schools. There were 36 of them, their names and location being as follows(220):

Kiangsu Province

Shanghai Medical College (Shanghai) 上海中醫學校
China Medical College (Shanghai) 中國醫學院
New China Medical College (Shanghai) 新中國醫學院
Chung Hua Medical Training Institute (Shanghai) 中華國醫專門學社
Soochow Medical School (Soochow) 蘇州國醫學校
Nanking Medical Institute (Nanking) 南京市私立國醫講習所
Wuchin Medical Institute (Wuchin) 武進國醫講習所
Wusih Medical Institute (Wusih) 無錫中醫講習所

Fukien Province

Foochow Medical Institute (Foochow) 福州中醫學社
Foochow Medical Training School (Foochow) 福州中醫專門學校
Hsien Yiu Medical Institute (Hsien Yiu) 仙遊國醫學社
Amoy Medical Training School (Amoy) 廈門國醫專門學校
Pu Tien Medical School (Pu Tien Hsien) 莆田縣國醫學校
Lung Kang Medical Training School (Lung Kang) 龍岡國醫專門學校

Hopei Province

Peiping Medical College 北平醫學院
Peiping Medical School 北平國醫學院
Peiping Medical Institute 北平中醫學院
Peiping Medical Training School 北平國醫專科學校
Peiping Medical Lecture Institute 北平中醫師資講習社

Chekiang Province

Chekiang Medical Training School (Hangchow) 浙江中醫專門學校
Lan Chi Medical Training School (Lan Chi) 蘭溪中學專門學校
Wenchow Medical Institute (Wenchow) 溫州中醫學社
Huang Shai Medical School (Huang Shai) 黃荷中醫專校

Kwangtung Province

Kwang Han Medical School (Canton) 光漢中醫學校
Kwang Tung Medical Training School (Canton) 廣東中醫藥專門學校
Kwang Tung Provincial Medical College (Canton) 廣東省立國醫學院
New China Medical Institute (Mei Hsien) 梅縣新中醫學社

Hupei Province

Hupei Medical School (Wuchang) 湖北國醫專科學校
Wuchang Medical Institute (Wuchang) 武昌國醫講習所
Central China Medical Institute (Hankow) 華中國醫專科學社

Szechuen Province

Szechuen Medical School (Chengtu) 四川高等國醫學校
Szechuen Medical High School (Chengtu) 四川醫學專門學校

(220) Personal Communication from Dr. Sung Ta-jen.

Shantung Province

Shantung Medical Training School (Tsinan) 私立山東國醫專科學校
Tsinan Medical Institute (Tsinan) 濟南國醫學社

Hunan Province

Hunan Medical Training School (Changsha) 湖南國醫專科學校

Anhui Province

Hwei Chow Medical School (Hwei Chow) 徽州國醫學校

It will be seen from the above that Kiangsu province with eight had the largest number of schools; Fukien came second with six; and Hopei third with five. As to the number of schools by cities, Peiping headed the list with five; Shanghai second with four; and Canton third with three. With the exception of the Kwangtung Provincial Medical College all the others were established by private individuals and supported by drug guilds or medical societies. Some of these have a large number of students. The one at Canton, for instance, has an enrolment of 500, which makes it perhaps the largest medical school in China. A few extracts from its prospectus may serve to give one an idea of a typical up-to-date native medical school.

NAME

Kwangtung Medical School.

ADMISSION REQUIREMENTS

Graduates of a middle School or with equivalent standards.

Must be over 17 years of age.

A certificate from the graduating school should be presented during the entrance examination.

COURSE OF STUDY

Premedical 1 year. Regular course 4 years.

(Fourth year students are required to take up clinical work at the school hospital).

CURRICULUM

Party Principles. Chinese classics. Japanese. Chemistry.
Physiology. Anatomy. Hygiene. Materia Medica. Dispensing.
General Medicine. Medical History. Pathology. Typhoid Fever.
Epidemic Fevers. Miscellaneous Diseases. Children's Diseases.
Smallpox. Women's Diseases. Diagnosis. Eye Diseases. Throat
Diseases. Surgery. Wounds & Injuries. Venereal Diseases.
Acupuncture and Caution. Medical Jurisprudence. Foreign
Methods of Diagnosis. Essentials of Foreign Drugs.

TUITION FEES

Tuition \$80 a year.

Text-books \$20 a year.

Library \$ 4 a year.

The fees are to be paid semi-annually in January and August. A breakage deposit of \$6 is required upon enrolment, to be refunded upon graduation.

Judging by present educational standards all these native medical schools are not up to requirements. Most of them have no proper accommodation, adequate equipment, laboratory facilities or clinical material. Indeed the majority do not deserve the name of school.

It is no wonder that the Ministry of Education refused to recognize them. A significant fact is that in the courses offered such subjects as chemistry, hygiene, anatomy, physiology, medical jurisprudence, foreign diagnosis and drugs, which do not belong to the domain of Chinese medicine, are also taught. This points to the tremendous effect modern medicine has already wrought on native empirical practice. The very foundation of the old system is in the process of disintegration. As further evidence one may scrutinize the activities of the Central Bureau of Native Medicine. Among its important objects is one for the modernization of native medicine. In spite of the apparent divergent policies of the new and old systems the tendency of both is towards the same goal—scientific medicine, which knows no national boundaries, racial barriers or sectarian prejudices.

CHAPTER XXII

PROMINENT PRACTITIONERS OF THE CHING DYNASTY

1. Yü Ch'ang, also named Chia-yen (喻昌字嘉言), was a native of Hsien Chien, Kiangsi. At the beginning of his career, he was a Bachelor of Arts destined for official service. But failing to secure a position in the metropolis, he first entered the monastery leading a hermit's life but later turned to medicine. He wandered about between Nanchang and Chingan and finally settled in Ch'ang-shu, Kiangsu. Success met him everywhere he went and he became well known as a skilful practitioner. Being convinced that the famous classic on typhoid by Chang Chung-ching had been distorted by previous writers, he set out to remedy its defects and composed the *Shang Lun P'ien* (尚論篇). He further wrote the *I Men Fa Lü* (醫門法律), which was an elucidation on the principles of treatment taken from the *Chin Kuei*. Hitherto, medical writers invariably compiled from ancient works but never dared to correct the errors or criticize the teachings of the old masters. But Yü Ch'ang had the rare courage to express his own views freely, throwing considerable light on the two classics above-mentioned. He died about the 30th year of K'ang Hsi (circa 1690) at the ripe age of eighty. Being very fond of chess it is said that he played three days and nights with the famous player Li Yuan-shao (李元兆) and died in the middle of the game. He was buried at Nanchang, Kiangsi; his grave being still to be seen just outside the city by the side of Lü Tso's Temple.

2. Chang Lu, alias Lu-yü and Shih-wan (張璐字路玉號石頑), was born in the 45th year of Wan Li, Ming dynasty 1617 A.D., in Wu-kiang, Kiangsu. During the dynastic change from Ming to Ch'ing in 1644 the people suffered great hardships and sickness was also rampant. Filled with compassion he tried to help his countrymen with his medical skill. But on account of the chaotic conditions his services were not much sought after by the public. He felt discouraged and closed his clinic, devoting his time to writing. Ever since the appearance of the *Ching Yao Fa Hui* (景岳發揮) and the *Hsin Fang Pa Chen* (新方八陣), which attacked the teachings of the Wen Pu sect, many had left its ranks. Chang Lu, however,

re-emphasized its good points and became its chief protagonist, perpetuating the works of Hsueh Chi and Chang Chieh-pin. He was the author of the *Shang Han Tsuan Lun* 2 vol. (傷寒續論二卷), *Shang Han Hsu Lun* 2 vol. (傷寒續論二卷), *Chen Tsung San Wei* 1 vol. (診宗三昧一卷) and *Pen Ching Feng Yüan* 4 vol. (本經逢源四卷). But his most famous work is the *I T'ung* (醫通) in 16 volumes which took him fifty years to compile. It was begun in 1644 and completed in 1693. He altered the manuscript ten times before it was finally published. This book is regarded by some as one of the standard works of the Ch'ing dynasty.

Chang Lu died in the 37th year of K'ang Hsi (1698) at the age of eighty-two, and left three sons who all followed the same profession. The eldest, Chang Tan-hsien (張誕先) composed the *Shang Han She Chien* (傷寒舌鑑) or the Tongue in Typhoid Fever; the second, Chang Fei-tao (張飛濤), wrote the *Shang Han Chien Cheng Hsi I* (傷寒兼證析義), a treatise on the complications of typhoid; and the third, Chang I-jou (張以柔), edited a pamphlet on smallpox called *Tou Chen Hsin Chüan* (痘疹心傳). The youngest son submitted his father's manuscript to Emperor K'ang Hsi while he was on a tour of the South in 1705, and received imperial sanction for its publication.

3. Wang Ang (汪昂), alias Jen An (初庵), was a native of Hsin Ning of the province of Anhwei. He was born during the last years of the Ming dynasty, date unknown. A scholar by profession he obtained a degree corresponding to Bachelor of Arts. When he was about thirty he began to lose interest in government service and led a life of seclusion, employing his time in studying the histories and philosophers. He also delved into medicine and began to write on the subject. Wang Ang was not a prominent practitioner nor a profound author. His books were mostly compilations but on account of their clearness and brevity they were very popular among beginners as well as laymen. Somewhat on the lines of the student aid series his *T'ang T'ou Kê Chüeh* (湯頭歌訣), or Aids to Materia Medica in verse, was a special favourite. A little work of only one volume, it contained 200 verses classified under 20 headings. Each verse consisted of 4 or 8 lines of seven characters. Over 300 formulas were enumerated in these verses. Other books by the same author are: *Pen Ts'ao Pei Yao* (本草備要) 4 vol., *Ling Su Lei Ts'uan* (靈素類纂) 3 vol., and *I Fang Chih Chieh* (醫方集解) 23 vol. They are all written in the same lucid and concise style.

4. Chang Chih-ts'ung (張志聰字隱庵) was famous for his researches in ancient medical literature. A native of Tsin Tang,

Chekiang, he lived in the reign of K'ang Hsi and studied medicine with Ko Shih-shih. Being dissatisfied with the condition of the times he became devoted to writing. He edited the commentaries on the *Nei Ching*, *Pen Ts'ao Ching*, *Shang Han*, *Chin K'uei*, etc., throwing considerable light on these classics. Ch'en Hsin-yüan thought that these treatises were the best medical works since the Han dynasty. His writings were so deep that few could understand them or would take the pains to read them through.

5. Kao Yün-pai (高琴字韻伯), a native of Tzu Hsi, Chekiang, was not a doctor by profession but a scholar. He specialized in the literature on typhoid and is regarded as one of the best authorities on the works of Chang Chung-ching. He wrote the *Shang Han Lai Su Chi* (傷寒來蘇集) and the *Shang Han Lun Chu Lun I* (傷寒論著論異). Chang Chih-tsung and Ko Shih-shih belong to this sect.

6. One of the most popular physicians of the Ch'ing dynasty was Yeh T'ien-shih (葉天士名桂號香巖). A recognized leader of the modern sect, which advocated the use of stimulating tonics, he flourished during the reign of K'ang Hsi and Ch'ien Lung. The dates of his birth and death were not recorded. He came from a medical family, his grandfather and father also being doctors who gave him the necessary training. However, his father died when he was 14 years old and he continued to study under Chu, one of his father's pupils. He was most eager for knowledge and whenever he heard of anyone who was proficient in a certain branch he at once went to take lessons from him. Between the ages of 12 and 19 he served under seventeen tutors. Soon his fame spread far and wide and he became the most popular physician of his time.

Anecdotes of his wonderful cures may be found in much of the current literature. The following story may be cited as an illustration of his astuteness in making himself known. It is said that in the beginning of his career he had very little practice. It happened that Chang Tien Shi, head of the Taoist religion, once caught a cold and was cured by Yeh, who, however, refused to accept any fee for his services. On being pressed he whispered something into Chang's ear. The latter smiled and nodded his assent. On the day of the departure of the Taoist chief the local authorities came to the boat to give him a farewell party. In the middle of the dinner a sedan chair with three bearers was seen hurrying past the shore. Chang immediately stood up and clasped his hands in a most reverent manner. The people were surprised and enquired for its meaning. "The Star of the Celestial Physician is just passing by," Chang replied, "so I arose to pay homage." The authorities quickly dis-

patched messengers to investigate and found it was Yeh T'ien-shih. Thereafter, whenever there was any sickness among the officials all asked for Yeh's attendance. Thus by a subterfuge he became famous within a short time. Shen Te-ch'eng of Changchow wrote a biography of him citing several of his interesting cases. Of the writings bearing his name, the *Wen Je Lun* (溫熱論), *Lin Cheng Chih Nan* (臨證指南) and *Ching Yao Fa Hui* (景岳發揮) are the most popular. But these are mere compilations by later writers as he did not compose any book himself. He employed aromatic stimulants very successfully in epidemic fevers and is considered a pioneer in this field of medicine. Yeh lived up to the age of eighty and had numerous followers among whom were Wu Chu-t'ung Wang Meng-ying, Chang Shu-chu and Yu Tang-fu. He had a high opinion of medicine as a profession and just before his death he warned his sons in the following words: "Drugs may be compared to a dangerous sword. To be a practitioner one must be born with brains, read extensively, otherwise one will surely kill people. Do not therefore speak lightly of medicine!"

7. A poet-doctor was Hsüeh Sheng-pai (薛雪字生白). As with most poets his actions were rather eccentric. Proud and exclusive he shunned popularity. He seldom consented to attend the notables of the time but preferred to associate constantly with the literati such as Yüan Tzu-tsai the essayist. He spent most of his time in drinking and composing verses with Yüan. The Poems of Sui Yüan recorded two of his wonderful cures as follows. One day Yüan's cook died of the plague. The body was ready for the coffin when Hsüeh arrived. He examined the case and smilingly remarked: "I always like to fight with plague devils. Who can tell that I might win." Taking a pill he crushed it, mixed it with the juice of *Acorus calamus*, and forced it down the patient's throat with these prophetic words: "When the cock crows the turning point comes." The patient recovered eventually. Another cook was suffering from delirium. The symptoms were loss of vision, some phlegm in the throat and violent pains in the belly. Hsüeh diagnosed it as 'cold colic' and applied revulsion. The effect was instantaneous. With a smile he said to Yüan: "My art and your poetry are similar. It comes from divine inspiration."

A learned scholar proficient in all branches of literature, he nevertheless refused to take any government position. As a practitioner his fame was on the same level as Yeh Tien-shih's. But he disliked to hear any comparisons made with his illustrious contemporary. So he capped himself with the appellation of 'the old man

who swept leaves (*yeh*)" (掃葉老人) (221). In his old age he was still more care-free and revelled in the simple life, like the sages of ancient times. He again styled himself with the pseudonym for 'a gourd,' I Piao (瓢) (222). Of the writings he left behind, *A Collection of Poems* and *The Principles of Medicine* (醫經原旨), are still read. The *San Chia I An* (三家醫案合刻) by Wu Tzu-yin mentioned a few of his clinical cases. But aside from this we have no other records from which to derive a proper estimate of his ability as a physician. He is considered as one of the leaders of the modern group.

8. An all-round scholar was Hsü Ta-chuang, also named Ling-t'ai (徐大椿字靈胎), a native of Wukiang, Kiangsu. He was versed in philosophy, arts, astrology, music, sports, but especially in medicine. Big, tall and strong, he was also brilliant in his studies and very filial towards his parents. In later years he retired to Hui Hsi which means the 'winding rivulet,' staying in a small cottage amidst the beautiful scenery of the hills. He gathered medicinal herbs and devoted much of his time to studies, calling himself the 'old man of the winding rivulet.' His fame was so great that he was summoned six times to the Imperial Court, the last occasion being in 1771 when he attended Emperor Ch'ien Lung. He died at the capital in the winter of the same year, aged 79. A versatile writer, he was the author of numerous works, among which are:

<i>Nan Ching Ching Shih</i>	(難 經 釋)	Commentary on the Difficult Classic
<i>Shen Nung Pen Ts'ao Ching</i>	(神農本草經)	Shen Nung's Materia Medica
<i>I Hsüeh Yüan Liu Lun</i>	(醫學源流論)	Medical History
<i>Shang Han Lei Fang</i>	(傷寒類方)	Formulas for Typhoid
<i>Lan T'ai Kuei Fan</i>	(蘭臺軌範)	Principles of Treatment
<i>I Kuan Pien</i>	(醫貫砭)	Errors of the <i>I Kuan</i> Exposed
<i>Shen Chi Ch'u Yen</i>	(慎疾芻言)	Plain Talks on Diseases

In the preface he enumerated many special reasons for the compilation of these books. A doctor should know the structure and functions of the internal organs, so he composed the *Nan Ching Ching Shih*. The true action of a drug should be determined, so he compiled the *Shen Nung Pen Ts'ao Ching*. The *I Hsüeh Yüan Liu Lun* described the history and development of Chinese medicine while the *Shang Han Lei Fang* was supposed to give a correct interpretation of the famous *Shang Han Lun*. According to him the popular doctors did not know the etiology of disease or the principles of treatment.

(221) This is a literary pun for the character *yeh* 葉 has two meanings, one for leaves and the other the surname of a person.

(222) Yen Hui, one of Confucius' disciples, was so contented with his lot that he felt happy even with only a spoonful of food and a gourd of water.

The *Lan T'ai Kuei Fan* was written for this class of people with such points in view. He strongly opposed the teachings of the *I Kuan* by Chao Hsien-k'e and to counteract its effects he issued the *I Kuan Pien*. He was of the opinion that the true art of healing had been lost, being dominated by false theories which cast a baneful influence on the profession. He therefore wrote the *Shen Chi Ch'u Yen*.

Besides the above he also published many works on philosophy, divination, music and drama. The following is a list:

- Tao Teh Ching Hsiang Shih* (道德經詳釋) Complete Commentary on the Canon of Virtue
Yin Fu Ching Chu Shih (陰符經註釋) Commentary on the *Yin Fu Ching*
Yao Fu Ch'uan Sheng (樂府傳聲) Treatise on Music
Hui Hsi Tao Ch'ing (潤溪道情) On the Winding Rivulet

9. Huang Yüan-yü (黃元御), also named K'un-tsai (坤載), Yen-nung (研農), and Yü-cn'iu (玉楸), hailed from Chang I in the province of Shantung. He was born in the 44th year of K'ang Hsi (1705). His eyes were injured at birth through the carelessness of the physician, and when he was thirty he decided to take up healing as a profession. In 1748 while he was living at Yang Ch'iu, the ambition to write came to him. Retiring to a quiet place he concentrated his mind upon his work. Within three months he completed his first book which was followed in rapid succession by others. He was one of the most pronounced advocates for a return to the ancient school. In his opinion the old classics, due to the centuries that had elapsed since their first appearance, were replete with typographical errors and other defects. Moreover, the commentators of the different dynasties had mutilated them beyond recognition, often altering the original arrangement and even stooping to substitution. He condemned these writers in the strongest terms and wrote the above series of books with the high-sounding name of 'Questions of the Classics Answered.' Though in a class by himself he has not many admirers. The following is a list of his writings with the dates of publication:

- | | | | |
|------------------------------|----------|----|---|
| <i>Shang Han Hsüan Chieh</i> | (傷寒懸解) | 16 | Vol. 1748 Questions on Typhoid Answered |
| <i>Chin Kuei Hsüan Chieh</i> | (金匱懸解) | 22 | Vol. 1748 Questions on the Golden Chamber Answered. |
| <i>Szu Sheng Hsüan Shu</i> | (四聖懸樞) | 5 | Vol. 1748 Questions from the Four Sages |
| <i>Ch'ang Sha Yao Chieh</i> | (長沙藥解) | 4 | Vol. 1753 Questions on Drugs Answered. |
| <i>Szu Sheng Hsin Yüan</i> | (四聖心源) | 10 | Vol. 1753 Gems from the Four Sages. |

<i>Shang Han Shuo I</i>	(傷寒說意)	11 Vol. 1754 Talks on Typhoid
<i>Su Ling Wei Yun</i>	(素靈微蘊)	4 Vol. 1754 Notes on the <i>Su Ling</i>
<i>Yü Ch'iu Yao Chieh</i>	(玉楸藥解)	8 Vol. 1754 Yü Ch'iu's Materia Medica
<i>Su Wen Hsüan Chieh</i>	(素問懸解)	Questions on the <i>Su Wen</i> Answered.
<i>Ling Shu Hsüan Chieh</i>	(靈樞懸解)	Questions on the <i>Ling Shu</i> Answered.
<i>Nan Ching Hsüan Chieh</i>	(難經懸解)	Question on the <i>Nan Ching</i> Answered.

10. Ch'en Nien-tsu (陳念祖字修園), a native of Chang Lo, Fukien, was a poor orphan. In his youth he viewed his contemporaries with contempt, often criticizing their prescriptions in a most unreserved manner. According to Chiang Ch'ing-ling, his old friend, Ch'en was a very skilful doctor. He claimed to be a distant disciple of Chang Chung-ching, the medical sage, and was ridiculed by his fellow practitioners. But in a critical case when everyone gave up hope he would offer to treat the patient. His behaviour was rather eccentric. He would take off his headgear, place it on the table, feel the pulse, and roll his eyes upward for a long time. He then made a cackling laugh, announcing that the case was not difficult but had been confounded by previous treatment. "He was attended by the famous Dr. So and So," the master of the house suggested. "It is all wrong" Ch'en at once retorted. "But the treatment is based on the standard teachings of the great masters like Chu, Chang, Wang and Li." "It is worse still," he would say, "is there any disease in the world that can be cured by these doctors." He continued reviling everybody as he wrote out each ingredient, criticizing, praising and explaining his own composition at the end of the prescription. He prepared the medicine personally and administered it to the patient. Very often the case got well as predicted.

As he matured in years and experience, his attitude changed entirely. Instead of the spectacular display of his younger days he became very serious and thoughtful. It took him now half a day to examine a case before he wrote a prescription. And when questioned for the line of treatment adopted, his answer was so slow that he appeared as if suffering from stuttering. A prolific writer, he edited many popular works, which are widely read both by the profession and laymen. He is however, not original, being more of a compiler than an original author. A full list of his writing is given below.

<i>Ling Su Chieh Yao Ch'ien Chu</i>	(雜素節要淺註)	Abridged Commentary on the Ling Su
<i>Pen Ts'ao Ching</i>	(本草經)	The Herbal
<i>Shang Han Lun Ch'ien Chu</i>	(傷寒論淺註)	Commentary on Typhoid Fever
<i>Ch'ang Sha Fang Ke Kuo</i>	(長沙方歌括)	Formulas of Chang Sha in Verse
<i>Shang Han I Ch'ieh Ch'uan</i>	(傷寒醫訣串解)	Concordance on Typhoid
<i>Chieh</i>	(
<i>Shang Han Chen Fang Ke Kuo</i>	(傷寒真方歌括)	Formulas for Typhoid in Verse
<i>Chin K'uei Yao Liao Ch'ien</i>	(金匱要略淺註)	Commentary on the Golden Chamber
<i>Chin K'uei Fang Ke Kuo</i>	(金匱方歌括)	Formulas from the Golden Chamber in Verse.
<i>Ching Yao Hsin Fang Pien</i>	(景岳新方畧)	On the New Remedies for Ching Yao
<i>Chi Chiu Ching Yen Fang</i>	(急救經驗方)	Effective Remedies for Emergencies.
<i>Shi Fang Miao Yung</i>	(時方妙用)	The Proper Use of Popular Remedies
<i>Shi Fang Ke Kuo</i>	(時方歌括)	Popular Remedies in Verse
<i>I Hsüeh San Tzu Ching</i>	(醫學三字經)	The A.B.C. of Medicine
<i>I Hsüeh Shih Tsai I</i>	(醫學實在易)	Medicine Made Easy
<i>I Hsüeh Ts'ung Chung Lu</i>	(醫學從衆錄)	Popular Medicine
<i>Nu K'e Yao Chih</i>	(女科要旨)	Essentials of Midwifery
<i>Shih Yao Shen Shu Chu Chieh</i>	(十藥神書註解)	Commentary on the Book of Ten Drugs.

11. Wu T'ang (吳塘字鞠通), an authority on fevers, was born about the 21st year of Ch'ien Lung (circa 1750 A.D.). At the age of 19, when his father died after a prolonged illness, he began to take up medicine. For ten years he studied the works of Yeh Kuei and became proficient in them. Yet he never put his knowledge into practice. In the 48th year of Ch'ien Lung (1783), a serious epidemic broke out in the capital and many people died. The doctors were unable to find any effective remedy for it. Wu T'ang carefully searched the old classics for guidance and after six years of hard study compiled the *Wen Ping T'iao Pien* (溫病條辨). This book consisted of six small volumes and embodied his experiences in the treatment of epidemic fevers. Hitherto all cases with a temperature were invariably treated as typhoid, as none dared to deviate from the traditional teachings of the great masters. Wu T'ang made a distinction between these different fevers and devised new forms of treatment with great success. In the 11th year of Tao Kuang (1831), he wrote another book called *I I Ping Shu* (醫醫病書), which consisted of a series of essays on the causes of diseases, therapeutics, and other subjects. His last work was the *Wu Shih I An* (吳氏醫案) in 4 volumes, which was a record

of the cases he treated. Wu T'ang is considered one of the able exponents of the new school.

12. An interesting figure of this period was Wang Ch'ing-jen (王清任字勳臣), who is famous for being the author of a remarkable work called the *I Lin Kai Tso* (醫林改錯) or Errors of Medicine Corrected. A native of Yü T'ien (玉田) of the province of Chihli (now Hopei), he was born in the 33rd year of Ch'ien Lung (乾隆) (1768). Realizing that the drawings of the viscera in ancient books were faulty he conceived the idea of correcting them. For forty years he tried to get at the truth by actual observation but without much success. Then a great opportunity came to him. To quote his own words: "In the 2nd year of Chia Ch'ing (1798) about the beginning of spring I happened to travel to Tao Ti Chen in the district of Lan Chow. A terrible epidemic was raging among the children at the time and nine-tenths of the afflicted died. Most of the poor people wrapped up the bodies in mats instead of putting them in coffins and buried them. According to the custom of the place the bodies were not buried deep in the ground in order that the dogs might eat them so that the next child born might be spared. Thus every day in the public cemetery were over 100 such exposed bodies. Daily I rode past on horse back. At first I could not help holding my nose but on thinking of the mistakes made by the ancients because they had not personally examined the viscera, I did not try to avoid the bad odour but every morning went to the burying place. I inspected the internal organs of those that were exposed. The dogs ate up mostly the liver and heart but left the stomach and intestines. Only about three out of ten bodies were complete. For ten consecutive days I examined over thirty perfect bodies. In this way I discovered that the ancient drawings as compared with actual human organs were not correct in detail" (223).

Wang was still not satisfied with the knowledge thus gained and was for ever in search of additional evidence. He had never seen the diaphragm and for years he was on the trail for it. Twice he heard of executions by the slicing process and he tried to see this organ but failed. In the 9th year of Tao Kuang (道光) (1829), he went to Kiang Ling in the province of Kiangsu, where Governor Heng Kung, who had seen many people executed while in command of the troops at K'o Shih Ka Erh in Mongolia, described to him in detail the shape of the diaphragm. His thirst for correct facts was such that to elucidate certain points he would kill animals that had been fed and those not fed for several days so as to compare them

(223) 醫林改錯自序, Preface of the Errors of Medicine Corrected.

with the human organs. Unfortunately, many of the so-called corrections were more faulty than the original. His fundamental error lay in his mistaking the arteries for air vessels—an error he shared with European investigators before Harvey. The *I Lin Kai Tso* (醫林改錯) consisted of only two *chüans* (卷) and, though not of much value, is full of ingenious ideas; his opinion concerning the cause of hemiplegia and the brain as the centre of thought is specially interesting. His was certainly a scientific spirit. He showed rare courage, originality, and perseverance in the pursuit of knowledge—traits which were mostly absent in Chinese writers. He strongly condemned those who without actual observation hastily put down in writing what was mere guess work to the detriment of later investigators. "To write a book without knowing thoroughly the internal organs, is it not comparable to a man speaking in a dream? To treat a disease without knowing the internal organs, how does it differ from a blind man groping in the dark?" he asked. In the last paragraph of his preface were these words: "I have had these figures cut according to my ideas, not with the view of deciding that the ancients were wrong, neither that posterity may know me, for I don't care whether posterity blackguards me or not in consequence. My only desire is that the medical faculty should see the illustrations and then their minds will be clear in regard to the matter, and the eyes seeing them will understand at a glance and know how to treat disease intelligently" (224).

Dudgeon, his historian, is right when regretting that Wang had no opportunity to come in touch with western medical men or lore. His book, although known in all parts of the country, has not produced any effect upon the stereotyped ideas of his contemporaries nor led to further inquiry and investigation. Nevertheless, he deserves the title of a "modern Chinese Anatomist," given him by Dudgeon, who translated several chapters of his book which appeared in the *China Medical Missionary Journal* of 1893-4. In Chinese circles he is sometimes styled as the "Reformer of Chinese Medicine."

13. Among the prominent practitioners of the Ch'ing dynasty Wang Shih-hsiung (王士雄字孟英) was fairly well known. His writings covered a great variety of subjects and were widely read by the profession. Born in the 13th year of Chia Ch'ing (1808), he came from a long line of medical ancestors. His great grandfather, grandfather, and father were all doctors. His father died when he was 14 years old. So strong was his desire to follow in his ancestors'

(224) Dudgeon: *A Modern Chinese Anatomist*, *China Med. J.*, 1893, p. 245: 1894, p.1.

footsteps that he begged his uncle to take care of his family so that he could devote his whole energy to his studies. This his uncle readily agreed. Thus for ten years he confined himself to his books never caring for outside affairs. And because of this people thought him crazy. He therefore styled himself as the "half crazy country-man." (半癡山人).

In 1837 an epidemic of cholera swept over the eastern provinces. He gained considerable experience in this disease and compiled a treatise on the subject. During the troublous year of 1861 he moved his home several times between Kiangsu and Chekiang as a refugee. Wherever he went he was known as a skilful practitioner. A voluminous writer he compiled, annotated or edited many works. Unfortunately many of them were either lost or destroyed during the Taiping Rebellion. But what remained was still quite numerous comprising fourteen different kinds, which may be divided into two groups.

(a) THOSE FROM HIS OWN PEN

<i>Ch'ien Chai Chien Hsiao Fang</i>	(潛齋簡效方)	1 vol. 1853 Simple Effective Remedies
<i>Szu K'e Chien Hsiao Fang</i>	(四科簡效方)	4 vol. 1853
<i>Huo Luan Lun</i>	(霍亂論)	2 vol. 1838 Essay on Cholera
<i>I An Ch'u Pien</i>	(醫案初編)	2 vol. Clinical Cases: First Report
<i>I An Hsü Pien</i>	(醫案續編)	8 vol. Clinical Cases: Second Report
<i>I An San Pien</i>	(醫案三編)	3 vol. Clinical Cases: Third Report
<i>Kuei Yen Lu</i>	(歸硯錄)	4 vol. Medical Notes

(b). THOSE HE COMPILED OR ANNOTATED

<i>Ch'ung-ch'ing-t'ang Sui Pi</i>	(重慶堂隨筆)	2 vol. 1856 Medical Jottings
<i>Hsü Shih I Pien</i>	(徐氏醫砑)	1 vol. 1850 A Critical Review of Hsü's Medicine
<i>Yen I Hsüan Ping</i>	(言醫選評)	1 vol. 1859 Critique on Medicine
<i>Yüan-t'ü I Hua</i>	(願體醫話)	1 vol. 1850 Medical Talks of Yuan T'ü
<i>Liu-chou I Hua</i>	(柳洲醫話)	1 vol. 1859 Medical Talks of Liu Chou
<i>Nü K'e Chi Yao</i>	(女科輯要)	2 vol. 1850 Essentials of Midwifery
<i>Ku Chin I An An Hsüan</i>	(古今醫案案選)	4 vol. 1853 Selected Chinese Records, Ancient and Modern
<i>Wen Je Ching Wei</i>	(溫熱經緯)	5 vol. 1855 Rules for Epidemic Fevers

14. Lu Mao-hsiu (陸懋修字九芝), a native of Yuan Ho, Kiangsu, was born during the reign of Tao Kuang (circa 1815) and died in the 13th year of Kuang Su 1887 A.D. He came of a literary family who were all proficient in medicine. He was known early

for his literary talents and was only attracted to medicine when past middle age. In 1859, when General Chang Wen-I (commander of the Anhwei troops) was sick, all the doctors failed to give him relief. Lu Mao-hsiu was summoned to the camp, and the general was cured after a few doses of his medicine. In 1861 the magistrate of Shanghai Liu was laid up with chest trouble. The patient was in a moribund condition in spite of all the popular drugs prescribed to him by other doctors. Lu reversed the line of treatment and pulled the magistrate through after a few doses. Such was the record of his skill.

He was a great admirer of Chang Chung-ching, the Hippocrates of China, whose life, strange to say, was not mentioned in any of the biographies of that time. It was through Lu's labours that we owe our knowledge of this great physician. He searched all available references from eighteen different sources, pieced together the facts thus obtained and compiled a short biography. This formed a valuable contribution to medical history. A pronounced adherent of the old school he vigorously opposed the teachings of Yeh Kuei and Wang Ch'ing-jen. His writings were mostly in praise of the great master. Enjoying good health he retained his hair and beard and could still write very small characters after seventy. He was the author of the *Shih Pu Chai I Shu* (世補齋醫書) 33 volumes.

CHAPTER XXIII

THE STRUGGLE BETWEEN THE OLD AND NEW FORCES

We now come to the last phase of our study—the struggle between the old and new forces. Ever since the intercourse between China and western countries began two distinct types of civilization have been brought into contact resulting in inevitable opposition and conflict. The superiority of occidental science as contrasted with the philosophy of the Orient soon made its influence felt. Gradually its effects were perceived in the educational, social, economic and lastly, the political life of the people. Medicine was similarly affected. In the beginning not much notice was taken of this foreign art, but after the opening of hospitals and the immediate results seen in surgery it steadily gained the confidence of the masses. In 1851 Dr. B. Hobson wrote a series of books (mostly translations from standard British works) on this new medicine. Dr. J. Kerr and others followed. These revolutionary ideas, in course of time, wrought a decided change in the orthodox teachings. At first the doctors of the old school viewed the new system with contempt; some took an indifferent attitude, while others treated it more or less as of academic interest. With the return of many graduates from Europe, America and Japan a further impetus was given to the spread of western methods of treatment. A new type of literature was produced which greatly influenced the outlook of the educated classes.

After the establishment of the Republic in 1912 radical changes occurred in every walk of life. The old order was superseded by the new. The whole governmental system was modelled after foreign patterns. It was but natural that the Imperial College of Physicians was abolished, and modern trained doctors were for the first time in history appointed as medical officers in the President's office.

The first reaction occurred in 1914 when the old-style practitioners in Peking elected representatives to call on Mr. Wang Ta-hsieh, the then Minister of Education, applying for registration of their medical society. The Minister refused to give his consent, adding the following significant remark: "I have decided to prohibit the native practice and do away with the crude herbs." Alarmed at the favourable attitude taken by the Government towards modern medicine they began

to organize a Medical Salvation Committee. A deputation was sent to petition the cabinet and the different Ministries for preservation of the time honoured profession but again without success. An idea of the stand taken by the authorities towards native practice may be gathered from the answer of the Board of Education which was to this effect: "We note the good intentions of the said society to promote research in Chinese medicine. But since new discoveries are being made every day and there are no national boundaries in science, the teaching of technical subjects in special schools should be based on the latest standard methods. The curriculum adopted for medical schools by this Ministry contains chemistry, anatomy and other scientific subjects. These can only be taught by those who have acquired the necessary knowledge. The regulations as promulgated are the results of careful deliberations by experts and were passed by the Provisional Educational Commission. The object is not to impose unfair restrictions on the old-style practitioners but to raise the standard of medical education so as to conform to the progress of the world. It is by such means that public health measures and preventive medicine can be effectively carried out. Therefore the application for a separate set of regulations for native medical schools cannot be considered."

The status of modern medicine was rendered more secure by the Presidential Mandate on Requirements of Officials, issued on September 30, 1915, which made no reference to the old-style methods of healing but demanded for candidates in Medicine, Pharmacy and Veterinary Science the standard insisted upon by all progressive countries, thus giving official recognition to the New Medicine.

In February 1922 the Ministry of Interior promulgated the first official regulations governing the practice of native medicine. This was strenuously opposed by the native medical bodies in many parts of the country which later organized themselves into a Medical Federation. They appealed to the Ministry for cancellation or modification of these regulations, which they considered unjust and detrimental to their interest. On account of the strong reaction the Ministry at last signified its assent to postpone temporarily their enforcement.

It will be seen from the preceding course of events that the position of the old-style profession is becoming more and more precarious. In order to stem the tide they tried to establish medical schools and organize medical societies. But all these were refused official recognition. Realizing that the danger was imminent, if they did not take radical steps to fight for their existence, they began to tackle this problem from various angles. Sporadic attempts had been made at different times to bring pressure upon the authorities but without much success. In 1925, however, when the Society for the Advancement of Education met at Tai Yuan, Shansi, the Kiangsu Native

Medical Society proposed to the conference that a resolution should be passed that schools teaching native medicine be recognized by the Ministry of Education as proper schools. This was adopted and referred to the Ministry for consideration. The following year, when the National Educational Conference was held at Hankow, the Educational Associations of Chekiang and Hupeh provinces presented a similar resolution which was again passed. About the same time the Scientific Terminology Committee was having a meeting at Shanghai. Two of its members, Drs. C. Voonping Yui and Yü Yun-hsiu, moved that a telegraphic circular be sent to all Provincial Educational Associations exhorting them to make a stand for scientific medicine instead of obstructing the march of progress by going back to herb therapy. The National Medical Association, the Chinese Medical and Pharmaceutical Association and the Shanghai Medical Association joined their voices in protest. The result was that the resolution passed by the Hankow Conference was pigeon-holed by the Ministry.

The crowning success of the new medicine was the establishment of a Ministry of Health under the National Government in Nanking on November 1, 1928. After one hundred years of care and nurture modern medicine had at last taken root in Chinese soil. Public Health Bureaux were created at the important cities such as Peking, Tientsin, Shanghai, Canton and other places. An elaborate program of work was formulated, and all public posts were held by modern trained physicians. It appeared that the path was now clear for many medical and sanitary reforms. However, as traditions and customs die hard and 'Rome is not built in one day,' there were bound to be obstacles in the way. The old forces were still as active as ever and were only mustering their strength for another struggle.

An open clash occurred when the National Board of Health at its first conference in Nanking on February 25, 1929, passed a resolution restricting the licensing of native practitioners. A hue and cry was at once raised. The Shanghai Native Medical Society was the first to take action. Telegraphic appeals were immediately sent out to all parts of the country calling for a mass meeting at Shanghai on March 17. A three day convention was held at the General Chamber of Commerce, in which 262 delegates representing 131 organizations from 13 provinces attended. Practitioners of the old school numbering over 2,000 closed their clinics for half a day as sympathetic demonstration of their protest. Editorials and full page advertisements appeared in the leading dailies. The whole profession was in a state of intense excitement. A deputation consisting of five persons, Messrs. Hsieh Li-heng, Sui Han-ying, Chiang Wen-fang, Chen Chuan-yen and Chang Mei-an, boarded the night train for Nanking on March 21, bringing with them a petition from the Federation to be laid before the Third

Plenary Conference which was then in session. The President and other important officials were interviewed and pressure was brought to bear upon the Ministry of Health. The outcome was that this famous resolution was pigeon—holed. Thus the old forces after many unsuccessful attempts scored the first victory over the new order. To commemorate this significant event the Federation decided that March 17 should be hereafter observed by all native medical societies every year. As this conference of the National Board of Health is of historical interest we give an abridged report of its proceedings below:

Date: February 23 to 26, 1929.
Location: Nanking Ministry of Health Building.
Chairman: Dr. J. Heng Liu, Vice-Minister of Health.
Present: Dr. Tsu Min-yi, member, Central Executive Committee;
 Dr. F. C. Yen, Dean, Central University Medical College, Shanghai;
 Dr. Wu Lien-teh, Director, Plague Prevention Service, Harbin;
 Dr. S. M. Woo, Chief Medical Officer, Ministry of Railways, Nanking;
 Dr. Yü Yun-hsiu, President, Medical and Pharmaceutical Association of China, Shanghai Branch;
 Dr. Yang Mao, President, Army Medical College, Nanking;
 Dr. Chen Fang-tse, Director, National Hygienic Laboratory, Shanghai;
 Dr. Houki Hu, Commissioner of Health, Greater Shanghai;
 Dr. Tse-fang Huang, Commissioner of Health, Greater Peiping;
 Dr. S. H. Chüan, Commissioner of Health, Greater Tientsin;
 Dr. Hu Ping, Commissioner of Health, Nanking;
 Dr. Ho Chi-chang, Commissioner of Health, Canton;
 Dr. Way-sung New, Shanghai;
 Dr. Voonping Yui, Shanghai;
 Dr. Y. H. Chou, Shanghai;
 Dr. Sung Wu-seng, Shanghai;
 Dr. S. C. Fang, Feiping.

RESOLUTION FOR ABOLISHING THE NATIVE PRACTICE

Proposer: Yu Yen

Subject: To abolish the old-style practice in order to remove the obstacles to medicine and public health.

Reasons: The medicine of to-day has advanced from the curative to the preventive stage, individual to collective medicine, personal to community emphasis. Modern public health service is based entirely on scientific medical knowledge with the corresponding political backing. I beg herewith to submit five reasons on the advisability of abolishing the native practice.

First: The old-style medicine of China adopts the doctrines of the Yin Yang principle, the five elements, the six atmospheres, the viscera and course of blood vessels. These are pure speculations having not a grain of truth.

Secondly: In diagnosis they (the old-style physicians) depend wholly on the signs of the pulse, dividing arbitrarily one portion of the artery into three parts—inch, cubit and bar, to correspond to the internal organs. Such absurd theories are deceptive to oneself and to others. They may be classified in the same category as astrology.

Thirdly: Since fundamentally they do not know diagnosis, it is impossible for them to certify the causes of death, classify diseases, combat epidemics, not to say eugenics and racial betterment, which are beyond their conception. They are therefore unable to shoulder the great responsibility of such big problems as the people's livelihood and the people's progress, and be a help to the Government.

Fourthly: The evolution of civilization is from the supernatural to the human, from the philosophical to the practical. Now while the Government is trying to combat superstition and abolish idols so as to bring the people's thoughts to proper scientific channels, the old-style physicians, on the other hand, are daily deceiving the masses with their faith healing. While the Government is educating the public as to the benefits of cleanliness and disinfection and the fact that germs are the root of most diseases, the old-style physicians are broadcasting such theories as when one catches cold in winter, typhoid will appear in spring; when one suffers from the heat in summer, malaria will come in autumn. These reactionary thoughts are the greatest hindrance to scientific progress.

In short, so long as the native doctors are not eliminated the thoughts of the people will be unable to change, new reforms cannot be introduced, and public health measures will be impossible to carry out. I have studied this question for over ten years, know the ins and outs of the native system, and have written numerous articles against it. For the sake of racial betterment and the improvement of the people's livelihood we cannot help but to employ extraordinary methods for dealing with this question. This is a national problem and not the views of a prejudiced individual. Now is the turning. I beg you gentlemen to consider this proposal.

Methods:

I. To deal with the existing native practitioners:

There are at present a considerable number of native practitioners. Their future livelihood together with the old customs should be taken into consideration. Therefore the enforcement of any measures must not be too sudden. The following six methods may be gradually introduced.

1. All native practitioners shall be registered at the Ministry of Health and a license granted them to carry on their business.

2. The Government shall establish Medical and Public Health Training Centres. All licensed practitioners should have a course of supplementary education, giving them the necessary elementary medical knowledge. Certificates will be issued to those who have completed the course and they will be granted the right to practise. Those found without such a certificate will be prohibited from practice.

3. The registration time limit will be December 31, 1930.

4. The supplementary training will extend over a period of five years. No classes will be conducted after this date.

5. Native medical societies may call meetings any time and may be given encouragement by the Government. But these will be purely academic in character. Members cannot take this as a pretext for permission to practise.

6. Those who have attained the age of 50 in 1929 and have been in practice for 20 years or more may be exempted from taking the supplementary training. A special license may be granted to them, but they will not be permitted to treat those infectious diseases named by law nor to issue death certificates, etc. Such license will be effective for 15 years only.

II. To restrict reactionary propaganda.

Strictly speaking, such teachings as, "red eyes and flushing of face is regarded as due to excessive fire"; "an irritable temper to liver air", are reactionary propaganda. But to change old customs and thoughts it is inadvisable to be too drastic. The more important matters should be attended to first. It is suggested that the following may be enforced by law:

1. Advertisements of old-style practitioners should be prohibited.

2. Newspapers and magazines should be censored and unscientific medical propaganda suppressed.

3. All native medical schools should be abolished.

To the above resolution the Conference passed the following measures to be referred to the Ministry of Health for action.

1. The time limit set for registration of native practitioners is to be the end of 1930.

2. Native medical schools be abolished.

3. The other suggestions such as censoring magazines and newspapers, prohibiting unscientific medical propaganda, and restricting advertisements for native doctors, etc., will be attended to by the Ministry whenever necessary.

One month after the foregoing, when the turmoil had scarcely subsided, the Ministry of Education issued an order instructing that

all native medical schools be changed to *Ch'uan Hsi So* (傳習所) or training institutes. This was soon followed by an announcement of the Ministry of Health ordering that the term 'hospital' as used by Chinese practitioners be altered to 'clinic'. At the same time some new legislative measures were drafted prohibiting the use of foreign medicines and instruments by native doctors, while extra rules and regulations governing the drug trade were promulgated. To the repeated appeals for cancellation of the above orders the two Ministries turned a deaf ear. Indignant at their refusal an extraordinary meeting was convoked by the Federation in Shanghai on December 1, 1929. The situation became more tense and the attendance exceeded that of the previous conference. 457 delegates representing 223 organizations were present; some came from such far places as the Philippines and the Straits Settlements. The conference lasted five days. Numerous resolutions were passed, chief among which were:

- a. To amend the constitution of the Federation.
- b. To define the status of the native profession.
- c. To ignore the change of the term "medical school" to "training institute."
- d. To oppose the restrictions imposed upon Chinese hospitals.

With these objects in view, a deputation consisting of Messrs. Chang Mei-an (Kiangsu), Fang I-yuan (Chekiang), Wang Tzu-chin (Anhwei), Wu Kung-tao (Kiangsi), Wang Ho-an (Hupei), Cheng Chien-ao (Hunan), Tu Yao-nien (Szechuen), Pao Shih-seng (Fukien), Lu Tsung-chiang (Kwangtung), Kuo Shui-ting (Kwangsi), Sun Tah-yung (Hopei, Shantung and Liaoning), Liang Ping-kuei (Kirin and Shansi), Chu Sung (Honan), Wu Yao-ting (Overseas), Cheng Tiao-chi, Tso We-chueh, Hsia Li-heng, Lu Yuan-lei, and Chiang Wen-fang (co-opted by the Conference), was dispatched to Nanking on December 17 to make representations to the Central Executive Committee and the presidents of the Five Yüan. The result was that the Government sanctioned their petition, suspending the enforcement of these measures, thus restoring peace and order to an otherwise troubled situation.

Realizing that their position was still insecure, for such orders may be revoked at any time, the Federation agitated for the establishment of a Central Bureau of Native Medicine along the lines of the Central Physical Culture Bureau. The object was to restrict the powers of the Ministry of Health which is entirely controlled by modern trained doctors and transfer the relevant authority to a body more sympathetic to the interests of old-style medicine. Having secured the support of several influential members of the Central Executive Committee their petition for such a Bureau was passed by the Government in January 1930 and steps were taken for its organization. But as it came into conflict with the existing system of ad-

ministration of both the Ministries of Health and Education, considerable difficulties were encountered. Later, however, Mr. T'an Yen-k'ai, President of the Executive Yüan, and others brought this matter before the Central Executive Committee meeting and it was finally decided to push the thing to a successful conclusion. Thus on March 17 the Central Bureau of Native Medicine came into being amidst the rejoicings and celebrations of all those concerned. As this Bureau is a landmark in Chinese medical history we give its constitution in full for reference.

CONSTITUTION OF THE CENTRAL BUREAU OF NATIVE MEDICINE

- ART. 1. The object of the Bureau is to adopt scientific standards of re-evaluating native medicine and to improve the methods of treatment and compounding drugs.
- ART. 2. There shall be a director, two vice-directors, who shall be in charge of all the affairs of the Bureau.
- ART. 3. The following departments shall be organized: (1) Secretary. (2) Research. (3) Training. (4) Compilation. (5) Analysis. (6) Therapeutics. (7) Hygiene.
- ART. 4. There shall be one Chief Secretary and a number of secretaries in the Secretary's Department, who shall be in charge of all correspondence, accounts, surveys, statistics, and miscellaneous matters, etc.
- ART. 5. In the Departments of Research, Training, Compilation, Analysis, Therapeutics and Hygiene, one chief will be in charge, and special committees shall be appointed to carry on their special duties.
- ART. 6. The Director and Vice-directors shall be elected by the Board of Directors, the chief secretary, the heads of Departments and special committees shall be appointed by the Director.
- ART. 7. For the benefit of the sick and to give special training in medicine and pharmacy the Bureau may establish hospitals and schools for this purpose.
- ART. 8. The expenses of the Bureau shall be supplied by the Government. Subscriptions may be raised from other sources when permitted by the Board.
- ART. 9. Branch Bureaux may be organized in different provinces and municipalities; special regulations for such shall be drafted.
- ART. 10. Anyone who has made some discoveries or has some secret formulas found effective after trial by the Bureau, will be recommended to the Government for award of patent rights.
- ART. 11. Anyone who has served as head of a department or as a member of a special committee for a period of two years or over and whose work is highly satisfactory, will be recommended to the Government for commendation.
- ART. 12. Amendments to this constitution may be made by the Board of Directors.

RULES AND REGULATIONS OF THE BOARD OF DIRECTORS

- ART. 1. The Board of Directors shall be appointed from amongst 98 persons nominated by the pre-organization committee of the Bureau. These 98 names shall be submitted to the Government for selection. Half of this number shall be selected as Board members and twenty-five as reserves.
In the above nominations each province or municipality shall have at least one nominee. The term of office is two years. After expiration of the term the Board shall call a general meeting and make new elections.

- ART. 2. The Board of Directors shall elect among themselves 9 to 11 to form the Executive Committee and one to act as Chairman.
- ART. 3. The Executive Committee shall meet once every month and the full Board once every quarter. An extraordinary meeting may be called by the Chairman when necessary.
- ART. 4. The duties of the Board shall be as follows:—
- To appoint the Director and Vice-directors of the Bureau.
 - To raise the current and other expenses of the Bureau.
 - To approve the budget and statement of accounts.
 - To promote the establishment of Branch Bureaux.
 - To supervise the work of the Bureau and its branches.
 - To convoke special meetings so as to improve native medicine and drugs.
- ART. 5. Any person who is respected by the community and who has rendered signal service to the Bureau may be nominated as an honorary Board member.
- ART. 6. The Chairman shall appoint one to three persons to serve as secretaries of the Board who shall look after the correspondence, accounts, social and miscellaneous affairs.
- ART. 7. The Bye-laws of the Board of Directors shall be fixed by the Executive Committee.
- ART. 8. Amendments to these Rules and Regulations may be made by the Board of Directors.

The first Director of the Bureau was Chiao I-t'ang (焦易堂), a member of the Central Executive Committee and concurrently a member of the Legislative Yuan. He was one of the staunchest opponents of the new medicine, and it was mainly through his efforts that the Bureau materialized. Great things were expected of this new organ by the promoters. They were, however, doomed to disappointment for, not long after its inception, serious differences of opinion arose between the branch bureaux and the existing medical societies. In addition, the duties and powers of the Central Bureau and the Health Ministry were not clearly defined. Conflicts were therefore frequent and unavoidable resulting in mutual misunderstandings.

Due to political reasons and pressure from various sources, the Ministry of Health was re-organized and incorporated into the Ministry of the Interior as the Wei Sheng Shu or National Health Administration in April 1931. But in July 1935 its scope was again enlarged and put under the direct control of the Executive Yuan.

In December 15, 1933 the Legislative Yuan after a heated discussion passed a set of regulations governing the practice of native medicine. It was, however, not enforced by the Executive Yuan. After two years of agitation these regulations were at last promulgated by a Presidential Mandate dated January 22, 1936, to the great relief of the Chinese herb practitioners. It definitely indicated the defeat of a section of government leaders, who had been staunchly advocating a complete prohibition of their practice. The regulations are as follows (225):

(225) *Chinese Medical Journal*, May 1935.

1. Prior to the holding of an examination of Chinese doctors by the Examination Yuan, persons of 25 years of age or above, who possess one of the undermentioned qualifications, may carry out the duties of a Chinese native doctor after passing a qualifying test before the Ministry of Interior, and receiving a certificate from it:—

- (a) Those passing a qualifying examination for Chinese doctors held by the Central Government, a Provincial Government or Municipality and possessing a certificate.
- (b) Those in possession of a permit from the Central Government, a Provincial Government or Municipality to practise as a doctor.
- (c) A graduate of a Chinese medical school in possession of a certificate.
- (d) Chinese doctors who have practised for more than five years.

The Rules governing the examination of Chinese doctors will be fixed by the Ministry of Interior.

2. Chinese native doctors now practising may continue to practise until such time as they are examined by the Ministry of Interior.

3. A Chinese native doctor, having been found duly qualified to practise, shall apply to the district official organ for registration on presentation of his certificate when he intends to exercise his profession in the district concerned.

4. A Chinese native doctor shall not treat a patient or write a prescription or give a medical certificate without having examined the patient personally. A doctor must not give a death certificate unless he has personally examined the body.

5. Whenever a Chinese native doctor treats a patient suffering from an infectious disease or examines the corpse of a person who has died from an infectious disease, he shall give directions for measures of disinfection and meanwhile make a report to the official organ concerned.

6. A Chinese native doctor shall accept and undertake the obligations, assigned by the district court, the Bureau of Public Safety or an administration office or a self government organ, to assist in all court cases, in matters concerning the public safety or in measures to prevent sickness.

7. Articles 4, 6, 7, 10, 11, 13, 15 and 17 of the Regulations governing foreign-atyie Chinese doctors are applicable to Chinese native doctors.

8. The district official organ may impose a fine of not more than \$100 on a Chinese doctor, who is ordered to suspend practising but who resumes his profession illegally.

9. Whenever a Chinese native doctor infringes these Regulations, the district official organ may impose a fine of not more than \$50 in addition to punishment under the rules relating to the conduct of Chinese native doctors. The doctor will be dealt with by the court should he commit a crime while practising his profession.

10. These Regulations shall come into force on the day of promulgation.

CHAPTER XXIV

LIST OF IMPORTANT WORKS

The medical literature of the modern period is not marked by any great or original work though there is no lack of quantity. Most of the books are but compilations, annotations, commentaries, critiques, introductions, or abridgments of previous publications. Some of the Manchu emperors, however, were great patrons of literature, and as an outcome of their encouragement there were produced several great encyclopaedias which embodied important works on medicine.

The first of such encyclopaedias is the *Ku Chin T'u Shu Chi Ch'eng* (古今圖書集成) or Library Collections, Ancient and Modern, which was written by order of the Emperor K'ang Hsi. The compilation began in 1686, occupied 40 years and when printed in 1726 consisted of 5,000 volumes. The best idea of the scale on which the work was done is obtained by comparing it with the Encyclopaedia Britannica. It contains between three and four times as much matter as the English work. There are six main divisions and it is classified under thirty-two categories. The book was printed from types cut in copper, the actual number of types being about 230,000 and it is generally believed that one hundred copies were printed, a few on fine, white paper as presentation copies, and the rest on yellowish paper.

The British Museum possesses probably the only complete copy of this edition to be found outside of China. It is on yellow paper and is bound in European style in 745 volumes. The Berlin Königliche Bibliothek has about four-fifths of the work. The Bibliothèque Nationale in Paris has a nearly complete set on white paper, the missing portions being filled up from the second edition. Two later editions have appeared; the first of these was printed in an edition of 250 copies by the Tsung-li Yamen, which fixes the date as after 1862. It was printed in Shantung, probably from wooden blocks. The only matter added is a list of errata, and the book is an almost exact facsimile of the first edition. Pelliot, who was the first to mention in print this second edition, has obtained later information than the above, to the effect that it was printed by photo-lithographic

process about 1895-98, at the expense of the Viceroy Liu K'un-I. A reprint in a smaller size was made by a Chinese syndicate, the work being carried out by Major Brothers in Shanghai. Movable leaden types were used and the printing occupied three years, being finished in 1888. An Alphabetical Index to the Encyclopaedia was compiled by L. Giles of the British Museum in 1911. This contains a very valuable introduction (226). The Chung Hua Book Co. is now reprinting a selected list of some of the works of this collection.

The medical section is included as a sub-branch of the category of *I Shu* (藝術) or skilled arts. It occupies sixty books and is divided into five hundred *chüan*. There is a reprint of this in movable leaden types published separately, entitled *Ku Chin T'u Shu Chi Ch'eng I Pu Ch'üan Lu* (古今圖書集成醫部全錄) or Complete Medical Works of the Library Collections, Ancient and Modern. The arrangement is as follows: The first six books containing 42 *chüan* treat of the *Su Wen* with annotations from various authors. The next three of 22 *chüan* deal with the *Ling Shu*. Book ten is on the *Nan Ching*. The pulse occupies 18 *chüan* of books ten to twelve. Physical diagnosis in book thirteen consists of 5 *chüan*. Books thirteen to sixteen are on the internal organs and blood vessels, while books sixteen and seventeen discourse on the respiration. After this the subject matter is classified under different headings according to the regions of the body—the head, face, ear, eye, nose, lips, teeth, tongue, throat, hair, neck, shoulder, axilla, ribs, spine, chest, abdomen, loin, extremities, genitals, arms, skin, muscles, tendons, bones. Each of these subjects has one or more *chüan*, and is to be found in book eighteen to twenty-seven. Then follow the various diseases, beginning with affections due to atmospheric changes such as cold, heat, dampness, dryness, which occupy books twenty-eight and twenty-nine. The next ten books treat of disease symptoms ranging from phlegm, cough, vomiting, diarrhoea to the more specific complaints like asthma, jaundice, epilepsy, plague, paralysis, consumption, etc. Book thirty-nine deals with the various poisons and sudden deaths; books forty-four and forty-five are on surgical affections. There are four books—forty-five to forty-eight—dealing with women's complaints. But the greatest attention is paid to diseases of children, with ten books—about one fifth of the whole work. Smallpox is particularly emphasized; of the ten books four are devoted to this single subject. The last two books contain the biographies of famous physicians, medical chronology, anecdotes and miscellaneous matters.

A still more ambitious work is the *Ch'in Ting Su K'u Ch'üan*

(226) *Encyclopaedia Sinica*, Art. *Lei Shu*.

Shu (欽定四庫全書) or The Four Literary Treasuries, a stupendous collection of Chinese literature which was compiled at the command of Emperor Ch'ien Lung by a staff of three hundred and sixty persons. It contains 3,457 separate works comprising of 79,070 *chüan* besides the titles of 6,766 other works in 93,556 *chüan* not included in the reprint, thus making a total of 172,626 *chüan*. It was begun in the 37th year of Ch'ien Lung (1772 A.D.) and completed in the 57th year (1792 A.D.). The work is arranged under four main divisions—classics, history, philosophy, and belles-lettres. This vast collection has never been published, all the books being handwritten and in manuscript form. Seven copies of each have been made and kept in seven different 'pavilions' built specially for this purpose. Each of the seven places is designated by a special name. The first, called Wen Yüan Pavilion (文淵閣) is in Peiping, behind the Wen Hua Palace. This is the only complete original edition at present in existence. The second, Wen Ch'ao (文潮), is in Mukden and the third, Wen Ching (文津), in Jehol. Both of these are now in Japanese hands, after the forcible seizure of the Three Eastern Provinces in 1932. The fourth, Wen Yüan (文源), was burnt in the conflagration of Yüan Min Yüan Palace by the French and British allied armies in 1860. The fifth, Wen Hui (文匯), in Yang-chow and the sixth, Wen Tsung (文宗) in Chinkiang, were lost during the Tai Ping Rebellion. The seventh, Wen Lan (文瀾) is in Hangchow. A part of it was damaged by the Tai Pings but later replaced by new copies. Many attempts have been made to print the whole collection, but due to the immense cost and other difficulties this was not carried out until 1933 when the Ministry of Education made a contract with the Commercial Press, Shanghai, to have it lithographed. It is still in the process of preparation and it will take some years before it can be finally issued.

The works on medicine are in a sub-section in the division of philosophy. An index to it, the *Szu K'u T'i Yao I Chia Lei* (四庫提要醫家類), has been prepared and is a valuable bibliography of the medical literature of China. The index is divided into two parts. The first contains the more important works of which there are 97 sets comprising 1539 volumes; the second treats of the minor works, of which there are 94 sets comprising 702 volumes. There are also 6 sets, comprising 25 volumes in the supplement. The total number of books listed amounts to 197 sets consisting of 2,266 volumes, which practically includes all the classics and standard works extant. The index, arranged in chronological order under the

different dynasties, is a descriptive catalogue, the history of each work being first given, followed by a critique, in which the strong and weak points are pointed out.

One of the best treatises on general medicine of modern times is the *Yü Ts'uan I Tsung Chin Chien* (御纂醫宗金鑑) or *Golden Mirror of Medicine*. It was written by a staff of eighty persons in compliance with an imperial order and issued in 1749. The book is in two sections; the first on internal medicine consisting of 74 volumes, the second on general surgery consisting of 16 volumes. A considerable part of the book is made up of extracts, revisions, corrections and summaries of previous authors. Indeed, it is more a compilation than an original treatise. The first 17 volumes contain the corrections of the *Shang Han Lun*, the next 8 volumes the corrections of the *Chin K'uei Yao Liao*. Both these ancient classics are by Chang Chung-ching. The following 8 volumes give a revised edition of the prescriptions of the most celebrated physicians. Important rules regarding the pulse occupy 1 volume while another treats of the influence of the air. After this there are 39 volumes dealing with different classes of disease under eight headings: typhoid fever 3 volumes; general diseases 5 volumes; women's diseases 6 volumes; smallpox 5 volumes; eye affections 2 volumes; acupuncture and moxa 8 volumes, bone-setting 4 volumes. The second section is entirely on surgery and consists of 16 volumes. The whole book is fully illustrated and parts of it are sometimes published separately. It is regarded as a standard work on Chinese medicine.

A feature of the Ch'ing dynasty was the prevalent custom of printing collections of choice productions, uniform in style, under the designation of *Ts'ung Shu* (叢書) or Repositories. A more correct term is "Collection of Reprints" for although some few original writings occasionally found their way into these repositories they are almost entirely made up of works, which had already appeared before the public in a detached form. These varied in number and extent, some merely containing about five or six, while others included several hundreds. Many ancient and curious writings are only to be found in these repositories. This custom has tended to the preservation of numerous writings of all ages, which otherwise would have been known only by name, from incidental quotations in more permanent authors. The contents of a few such collections are herewith given:—

1. 醫宗金鑑醫學叢書共四十卷清丁松生輯
Medical Collections

14 Vols. by Ting Sung-sheng

The Fontanel, 2 vols.

2. 醫宗金鑑二卷

2. 傳信適用方四卷

Appropriate Remedies, 4 vols.

3. 衛濟寶書二卷 Precious Book of Treatment, 2 vols.
4. 太醫局呈文九卷 Model Essays for State Examinations, 9 vols.
5. 產育方慶方二卷 Midwifery Prescriptions, 2 vols.
6. 濟生方八卷 Life Preserving Recipes, 8 vols.
7. 產寶請方一卷 Obstetrical Recipes, 1 vol.
8. 急效仙方六卷 Emergency Prescriptions, 6 vols.
9. 瑞竹堂經驗方五卷 Jui Chu T'ang Formulary, 5 vols.
10. 接瘡論疏一卷 Expository on Essay on Malaria, 1 vol.

II. 軒岐學海一百八十四卷清徐國麟輯

Medical Sea, 184 vols. By Hsü Kuo-lin.

1. 素問鈔註十二卷 Annotations on the Su Wen, 12 vols.
2. 運氣便覽註八卷 Guide to Revolutionary Influences, 8 vols.
3. 脈指六卷 Compass on the Pulse, 6 vols.
4. 傷寒典要二十四卷 Quotation from Typhoid, 24 vols.
5. 虛勞金鏡錄八卷 Golden Mirror on Consumption, 8 vols.
6. 剪紅直體八卷 Truths on Dividing the Red, 8 vols.
7. 軍重定婦人規八卷 Rules on Midwifery, 8 vols.
8. 古方八陣八卷 Ancient Eight Army Plans, 8 vols.
9. 新方八陣八卷 Modern Eight Army Plans, 8 vols.
10. 類方選摘十六卷 Selected Formulary, 10 vols.
11. 本草外驗方四卷 Choice Prescriptions from the Herbal, 6 vols.
12. 海內外科新法十卷 Effective Remedies from Overseas, 4 vols.
13. 新內科別傳三卷 New Internal Treatment, 10 vols.
14. 外科別傳三卷 Other Discourses on Surgery, 3 vols.
15. 幼痘心法八卷 Treatise on Children's Diseases, 4 vols.
16. 治痘心法八卷 Treatment of Smallpox, 8 vols.
17. 青明宗印六卷 Handbook of Medicine, 6 vols.
18. 眼學全書五卷 Complete Treatise on Eye Diseases, 5 vols.
19. 內經選案三十卷 Selections from the Internal Classic, 8 vols.
20. 歷代名醫選案三十卷 Clinical Cases from Famous Physicians, 30 vols.

III. 周激之醫書(甲)自著醫書二十六卷

Medical Works, 26 vols. (a) Those by the author.

1. 脈學四種十四種 The Four Pulses, 14 kinds
2. 形色外診簡摩二卷 Physical Diagnosis, 2 vols.
3. 重訂診家直訣二卷 Secrets of Diagnosis, 2 vols.
4. 傷寒補例二卷 Supplement to Typhoid, 2 vols.
5. 讀醫隨筆六卷 Medical Jottings, 6 vols.

(乙) 校刻醫學叢書

(b) Those by other writers

1. 神農本草經 Shen Nung's Herbal
2. 經仲淳本草經疏 Expository on the Herbal
3. 王叔和脈經 Pulse Classic
4. 戴同父脈訣刊誤集解 Corrections on Secret of the Pulse
5. 滑伯仁難經本義 True Meaning of the Difficult Classic
6. 華元化中藏經 The Internal Organs
7. 華元化內照法 Inner Reflection Methods
8. 巢元方諸病源候論 Etiology and Symptomatology of Disease
9. 朱丹溪脈因證治 Principles of the Pulse
10. 錢仲陽小兒藥證直訣 Children's Complaints
11. 關季忠小兒方論 Prescriptions for Children
12. 董及之斑痧方論 Eruptive Fevers

(丙) 評註醫藥叢書

(c) Commentaries and Annotations

1. 滑伯仁診家秘要 Diagnostic Methods
2. 張潔古藏府藥式 Internal Organs
3. 朱丹溪金匱鉤玄 Selections from the Golden Chamber
4. 劉河間三消論 Essay on Diabetes
5. 葉天士溫熱論 Epidemic Fevers

6. 葉天士幼科要略 Essentials of Children's Diseases
7. 葉案存真 Yeh's Clinical Cases
8. 馬元儀印機草 Medical Notes
9. 內經評文 Review of the Internal Classic
10. 史載之方 Shih Tsai-chih's Recipes
11. 慎柔五書 Shen Jou Five Books
12. 韓氏醫通 Han's Textbook of Medicine

IV. 徐氏醫書五十九卷清徐大椿撰
Medical Works, 59 Vols. By Hsü Ta-ch'un

1. 難經釋義 二卷 Commentary on the Difficult Classics, 2 vols.
2. 醫學源流論 二卷 Medical History, 2 vols.
3. 神農本草經百種錄 一卷 100 Drugs from the Herbal, 1 vol.
4. 醫貫絜類 二卷 Errors of the I Kuan Exposed, 2 vols.
5. 醫傷寒類方 一卷 Prescriptions for Typhoid, 1 vol.
6. 醫蘭臺規範 八卷 Principles of Treatment, 8 vols.
7. 潤溪醫案 一卷 Hui Hsi's Clinical Records, 1 vol.
8. 慎疾經旨 一卷 Plain Talks on Disease, 1 vol.
9. 內經要略 一卷 Gems from the Internal Classic, 1 vol.
10. 脈訣性理 一卷 Stepping Stones to the Secret of the Pulse, 1 vol.
11. 脈藥傷寒 一卷 Pharmacology, 6 vols.
12. 傷寒約編 八卷 Typhoid Fever, 8 vols.
13. 舌鑑圖說 一卷 Illustrations on the Tongue, 1 vol.
14. 女科指要 九卷 Miscellaneous Diseases, 9 vols.
15. 女科指要 六卷 Essentials of Midwifery, 6 vols.
16. 女科指要 八卷 Clinical Cases of Midwifery, 1 vol.
17. 女科指要 八卷 Guide to Treatment, 8 vols.

V. 潛齋醫書三十二卷清王孟英輯
Medical Works, 32 vols. By Wang Meng-ying.

1. 重校堂醫錄 二卷 Jotting on Medicine, 2 vols.
2. 徐氏醫選 一卷 Hsü's Medical Treatise, 1 vol.
3. 胃醫選評 一卷 Critical Medical Essays, 1 vol.
4. 願洲醫話 一卷 Medical Miscellany, 1 vol.
5. 柳簡效方 一卷 Medical Notes of Liu Chou, 1 vol.
6. 簡效方 一卷 Simple Effective Remedies, 1 vol.
7. 四科簡效方 四卷 Simple Remedies for the Four Branches, 4 vols.
8. 霍亂論 二卷 Essay on Cholera, 2 vols.
9. 女科輯要 二卷 Elements of Women's Diseases, 2 vols.
10. 古今醫案四按 四卷 Selected Clinical Records, Ancient and Modern, 4 vols.
11. 王氏醫案正續集 十三卷 Wang's Supplementary Collection of Clinical Cases, 13 vols.

VI. 醫林指月二十三卷清王琢崖編
Guide to Medical Literature, 23 vols. By Wang Cho-ai.

1. 醫學真傳 一卷 Truths of Medicine, 1 vol.
2. 質疑錄 一卷 Doubtful Points, 1 vol.
3. 醫家心法 一卷 Essentials of Medicine, 1 vol.
4. 易氏醫案 一卷 I Shih's Clinical Papers, 1 vol.
5. 莊園處方存案 一卷 Clinical Papers, 1 vol.
6. 傷寒金鏡錄 一卷 Golden Mirror of Typhoid, 1 vol.
7. 瘧瘧論 二卷 On Malaria, 2 vols.
8. 達生論 二卷 Preservation of Life, 2 vols.
9. 達生論 三卷附一卷 The Works of Pien Ch'iao, 4 vols.
10. 本草崇原 三卷 The Original Herbal, 3 vols.
11. 本草山堂類 二卷 Discussions on the Classics, 2 vols.
12. 學古診則 四卷 Ancient Diagnostic Methods, 4 vols.

VII. 陳修園醫書一百二十八卷
Medical Works, 118 vols.

1. 神農本草經讀 四卷 Readings in Shen Nung's Herbal, 4 vols.
2. 醫學三存 四卷 The A.B.C. of Medicine, 4 vols.

3. 時方妙用四卷 Right Use of Popular Remedies, 4 vols.
4. 時方歌括二卷 Popular Remedies in Verse, 2 vols.
5. 醫學新方四卷 On the New Remedies, 4 vols.
6. 女科要旨四卷 Essentials of Midwifery, 4 vols.
7. 醫學實在易八卷 Medicine Made Easy, 8 vols.
8. 醫學從衆錄八卷 Popular Medicine, 8 vols.
9. 廣要略淺註六卷 Simple Commentary on the Golden Chamber, 6 vols.
10. 傷寒論淺註六卷 Simple Commentary on Typhoid, 6 vols.
11. 傷寒方歌括六卷 Formulas of Ch'ang Sha in Verse, 6 vols.
12. 靈素集註節要十二卷 Abridged Commentary on the Ling Shu, 12 vols.
13. 傷寒醫訣串解六卷 Concordance on Typhoid, 6 vols.
14. 傷寒真方歌括六卷 Formulas for Typhoid in Verse, 6 vols.
15. 十藥神書註解一卷 Marvellous Book of Ten Prescriptions, 1 vol.
16. 急救異痧奇方一卷 Treatment of Grippe, 1 vol.
17. 瘟疫明辨四卷 Discourse on Epidemic Fevers, 4 vols.
18. 經驗內外百病方一卷 Remedies for the Hundred Diseases, 1 vol.
19. 白喉治法抉微一卷 Treatment of Diphtheria, 1 vol.
20. 福幼篇一卷 Care of Infants, 1 vol.
21. 咽喉脈法通論一卷 Pulse Indications in Throat Troubles, 1 vol.
22. 救速良方一卷 Life Saving Formulas, 1 vol.
23. 太乙神鍼一卷 On Acupuncture, 1 vol.
24. 霍亂論一卷 Essay on Cholera, 1 vol.
25. 吊腳痧法論一卷 Leg-Cramps Disease, 1 vol.
26. 爛喉丹痧輯要一卷 Treatise on Diphtheria, 1 vol.
27. 急救喉痧要方一卷 Treatment of Diphtheria, 1 vol.
28. 瘧疾論一卷 On Malaria, 1 vol.
29. 喉痧正的一卷 Etiology of Diphtheria, 1 vol.
30. 外科證治全生集一卷 Manual of Surgery, 1 vol.
31. 傷寒舌鑑一卷 The Tongue in Typhoid, 1 vol.
32. 眼科捷徑一卷 Short Cuts to Eye Diseases, 1 vol.
33. 養生鏡一卷 Mirror of Hygiene, 1 vol.
34. 達生篇一卷 Preservation of Life, 1 vol.
35. 春溫三字訣一卷 A.B.C. of Paratyphoid, 1 vol.
36. 痢症三字訣一卷 A.B.C. of Dysentery, 1 vol.
37. 保嬰要旨一卷 Outlines of Infant Care, 1 vol.
38. 引痘略一卷 On Vaccination, 1 vol.
39. 溫熱條辨一卷 Discourse on Fevers, 1 vol.
40. 本草便讀一卷 Abridged Herbal, 1 vol.
41. 溫熱贅言一卷 Notes on Fevers, 1 vol.
42. 本草綱目種錄註解一卷 100 Drugs from the Herbal, 1 vol.
43. 婦科雜症一卷 Manual of Women's Diseases, 1 vol.
44. 醫名元錄一卷 Selected Prescriptions, 1 vol.
45. 名醫別錄一卷 Materia Medica, 1 vol.
46. 平脈法歌訣一卷 The Normal Pulse in Verse, 1 vol.
47. 局方發揮一卷 Standard Formulary, 1 vol.
48. 醫法心傳一卷 Principles of Treatment, 1 vol.
49. 增補食物秘書一卷 On Dietetics, 1 vol.

VIII. 六醴齋醫書五十五卷程永培校刊

Medical Works, 55 vols. compiled by Ch'eng Yung-pei.

1. 褚氏遺書一卷 Chu's Memoirs, 1 vol.
2. 肘後備急方八卷 Prescriptions for Emergencies, 8 vols.
3. 元和紀用經一卷 Practical Medicine, 1 vol.
4. 蘇沈內翰良方十卷 Su Ch'en's Prescriptions, 10 vols.
5. 十藥神書一卷 Marvellous Book of Ten Prescriptions, 1 vol.
6. 加減靈秘十八方一卷 Indispensable Formulas, 1 vol.
7. 韓氏醫通二卷 Han's Textbook of Medicine, 2 vols.
8. 痘疹傳心錄十九卷 Smallpox and Measles, 19 vols.

9. 折肱漫錄 七卷 Miscellaneous Notes on Medicine, 7 vols.
10. 慎柔五書 五卷 Shen Jou Five Books, 5 vols.

IX. 韋倫堂醫學叢書六十九卷 日人丹波元簡輯著 清楊守敬刊
Collected Medical Works, 69 vols. Compiled by Taki Motofumi,
published by Yang Shou-ching

1. 素問說 八卷 Notes on the Su Wen, 8 vols.
2. 難經疏證 二卷 Expository on the Difficult Classic, 2 vols.
3. 傷寒論輯義 七卷 Epitome on Typhoid, 7 vols.
4. 傷寒論述義 五卷 Elements of Typhoid, 5 vols.
5. 傷寒論廣要 十二卷 Outlines of Typhoid, 12 vols.
6. 金匱玉函要略輯義 六卷 Epitome on the Golden Chamber, 6 vols.
7. 金匱要略述義 三卷 Principles of the Golden Chamber, 3 vols.
8. 藥治通義 十二卷 General Principles of Materia Medica, 12 vols.
9. 脈學輯要 三卷 Epitome on the Pulse, 3 vols.
10. 救急遺方 二卷 Selected Prescriptions, 2 vols.
11. 醫略三卷 Medical Notes, 3 vols.
12. 醫略抄 一卷 Jottings on Medicine, 1 vol.
13. 經穴纂要 五卷 Epitome on Acupuncture Points, 5 vols.

X. 中西匯通醫書二十八卷 清唐容川著

Foreign and Chinese Medical Works, 28 vols. By T'ang Jung-ch'uan.

1. 中西匯通醫書義 二卷 Principles of Medicine, 2 vols.
2. 金匱要略淺註補正 九卷 Simple Commentary on the Golden Chamber, 9 vols.
3. 傷寒論淺註補正 七卷 Simple Commentary on Typhoid, 7 vols.
4. 血證論 八卷 Essay on Blood Diseases, 8 vols.
5. 本草問答 二卷 Catechism on the Herbal

XI. 中西醫學全書三十二卷 清羅茂亨輯刊

Complete Works of Foreign and Chinese Medicine, 32 vols.
Compiled by Lo Mao-t'ing.

1. 藏腑圖說 三卷 Atlas on the Internal Organs, 3 vols.
2. 症治要旨 一卷 Principles of Treatment, 1 vol.
3. 醫案類錄 一卷 Clinical Records, 1 vol.
4. 皮膚新編 一卷 Skin Diseases, 1 vol.
5. 格致醫理 一卷 The Practice of Medicine, 1 vol.
6. 東西彙錄 一卷 Lexicon of Oriental and Occidental Medicine, 1 vol.
7. 傷寒補正 七卷 Corrections on Typhoid, 7 vols.
8. 血證論 八卷 Essay on Blood Diseases, 8 vols.
9. 醫經精義 二卷 Principles of Medicine, 2 vols.
10. 本草奧義 二卷 Principles of Materia Medica, 2 vols.
11. 脈學精微 三卷 Essentials of the Pulse, 3 vols.
12. 脈論 二卷 Talks on the Pulse, 2 vols.

A remarkable work written by a Japanese is the *I Chi K'ao* (醫籍考), which is a catalogue of Chinese medical literature. It was begun by Taki Motofumi (多紀元簡), director of a medical school, who was a great lover of books and collected a large number of Chinese medical manuscripts. He died, however, in the midst of his task. His son, Taki Mototane (多紀元胤), having succeeded to his father's post, completed the work in 80 volumes. The arrangement follows the style of Chu I-tsun's (朱彝尊) (*Hsi-ch'ang 錫鬯*) *Ching-I K'ao* (經義考). Each book is first given the title, then the number of volumes, whether it is extant or lost; next come the prefaces and introductions by different writers, an account of the

author, and in conclusion a critique of the contents. The descriptions cover a list of 2877 different works, arranged under the headings of the classics, materia medica, dietetics, anatomical pictures, diagnosis, acupuncture charts, internal medicine, therapeutics, biographies and histories. It is the most comprehensive of all bibliographies on Chinese medicine and is invaluable to students of medical history. The author was born in 1789 and died in 1827 at the early age of thirty-eight. The present reprint is a photographic reproduction of the original manuscript in the possession of Dr. Fujikawa, the celebrated Japanese medical historian.

The *Cyclopaedia of Chinese Medicine* (中國醫學大辭典) is a comparatively recent work published by the Commercial Press, Shanghai, 1921. The editor, Hsieh Li-heng, with the assistance of his staff of teachers and medical students, spent six or seven years in its compilation. It is claimed that over 3,000 medical books had been consulted as reference. The work is in two large volumes, printed on good paper, foreign binding; and contains 4690 pages with a supplement of 126 pages. Like other Chinese dictionaries it is arranged according to the radical system. There are over 70,000 entries. It contains a great deal of information from the modern viewpoint as well as from the ancient, and is a useful reference book on Chinese medicine.

CHAPTER XXV

CULTURAL AND SOCIAL CONDITIONS

During the Ch'ing dynasty the unfavourable attitude adopted by the people, especially by the educated class, towards the medical profession was marked. Instead of being regarded as a learned science or art, the practice of medicine has been, and still is, considered as an avocation, a side occupation, or else purely a business. On account of the low estimate of their services, doctors often play a secondary role in the treatment of a case. Their prescriptions are viewed with suspicion, carefully examined, discussed and analysed as to whether the medicine is "cooling" or "heating," suitable or unsuitable to the patient. If, in the opinion of the patient's relatives or friends, the medicine prescribed is not perfect, additions, alterations or removals are freely made, or sometimes the whole prescription is rejected. Physicians are called or dismissed at will; two or three or even half a dozen may be engaged at the same time—though rarely for the purpose of consultation. The physicians come one after another, each writes a prescription, explains the supposed cause of the illness, and his duty is done. The richer the family, the more numerous are the doctors engaged; the larger the household, the greater the fuss. It is not usual for a physician to visit the patient again unless he receives another invitation. Such a custom naturally makes any real observation upon the course of a disease and the action of drugs impossible.

A poem, entitled "Lament of Medical Practice" by Hsu Ling-tai, a famous and versatile doctor of the Ch'ien Lung period, describes the standing of the Chinese physician in a most thorough manner. We give a prose translation: "Having nothing to do they take to healing. What do such people know about the value of human life? Or that saving people is not a business proposition? They only read half a medical book and learn the uses of a few drugs. Before starting practice they just inquire what medicine the popular quacks are using and then try it on their patients. If some good results happen they are themselves surprised; if death occurs they will say that the medicine is good but the disease is fatal. How many innocent boys and girls, young husbands and wives, aged fathers

and mothers have you killed? And people do not blame you, but on the contrary compensate you for the attendance and medicine! Oh, how could you have the heart to do it? Though the law cannot reach you yet heaven will not be deceived. Should you really want to serve suffering humanity you must first read more. If unable to do so, better change your profession so as to escape the fires of hell!"(227).

The reaction against doctors must have been rather intense, for among the literary contributions of this period we find a remarkable essay by Yü Ch'ü-yüan(228), a noted classical scholar, calling for the abolition of medicine. Though it did not exert a very profound influence at the time, yet it reflected on the ability of the then practising physicians and showed the low estimate entertained of the profession by a certain class of people. The essay is divided into seven paragraphs; a brief resumé is given below:

1. In ancient times medicine and divination were on the same footing. After the T'ang dynasty divination was discarded. Why then cannot we abolish medicine also?

2. The foundations of Chinese medicine were based on Shen Nung's *Herbal* and Huang Ti's *Internal Classic*. Both these books are forgeries.

3. In the beginning sorcerers and doctors were combined in one person. Though later their duties were separated, their knowledge never advanced. Why should we nowadays despise sorcerers and respect doctors?

4. The pulse is taken as the criterion for diagnosis. But no two authorities are agreed as to the exact nature of the 3 divisions and 9 spaces. How is it possible to treat diseases without knowing the diagnosis?

5. None seems to know the proper action of drugs. There are so many mistakes in the *Pen Ts'ao* that we are at a loss to distinguish between right and wrong. Is the so-called 'hot' article really hot and the so-called 'cold' article really cold? When a drug is unreliable treatment is useless.

6. Confucius did not know medicine, so when Chi K'ang sent him some herb during his illness, he did not dare take it. At the present time doctors are becoming more numerous while their art is getting less effective. Those who recover after taking drugs will also get well without them. Similarly those who do not take medicine and die will not be cured even if they take it.

(227) 徐靈胎行略嘆

(228) 俞樾蘭齋醫論

7. All diseases come from the mind. Hence if we have a strong mind we can prevent them. Doctors are unreliable, medicines ineffective; the only remedy is to cultivate good thoughts and banish all desires. Then the vital spirits will be harmonized and the body become strong. (How like Eddyism of the present day!)

One of the knottiest problems for China in the Modern Period is the opium question. Aside from its political, economic, social and international aspects, which do not primarily concern us, the evils which arise from opium smoking constitute a serious menace to the individual. It injures the health and physical powers, especially of the working and poorer classes, induces laziness, idle habits and unwillingness to exertion, shortens life and diminishes vitality. The habit is easily begun; the offering of it, as a glass of wine among many classes of Europeans or Americans, easily leads the fashionable votary into the practice; the fast man commences to use it as an aphrodisiac; the prostitute takes it because the visitors do; some take it first to ease pain or disease; while others are led into it by their friends and acquaintances. Once formed, the habit is very difficult to break—some try over and over again to wean themselves from the pipe. Terribly rapid is the ascendancy of this fatal vice. A few weeks' indulgence will rivet its chains for life. Thenceforth the unhappy captive must have his stimulant at accustomed hours, or even his feeble labour is impossible, and griping pain and intolerable depression will lay hold of him. Many a labourer whose wages amount to \$3 or \$5 a month expend twice such sums on opium. How is this contrived? The smoker borrows on all sides; the pawnbroker fattens on his wretchedness. The poor mother toils all day at embroidery to earn food to hush the hunger-cries of her children. Clothing of wife and children, and lastly their very home, are sold over their heads, even if they themselves are not bargained away for opium. "No flesh, no strength, no money," is a native proverbial summing-up of the dismal case; it is well known that three or four generations will exhaust an opium smoking family.

The exact date of its importation into China is uncertain. Edkins states that the poppy was apparently unknown in this country previous to the T'ang dynasty (618 A.D.); the first mention in literature is the *Supplementary Herbalist* of Chen Tsang-chi in the first half of the eighth century, and in the *Herbalist's Treasury*, 973 A.D., is a reference to the medicinal use of the poppy, whilst a medical writer, Lin Hung, probably of the twelfth century, and other medical writers a little later, describe the preparation of opium and its uses in bowel troubles. There can be little doubt

that the preparation of opium had been introduced into China through Arab channels by the end of the sixteenth century(229). Porter Smith says that opium, coming perhaps from Arabia or Persia, has been known since the Mongol dynasty, at least, in China. In the Ming dynasty it came into more general use in medicine(230). Stuart thinks that the poppy does not seem to have been indigenous to China. Evidence goes to show that it was introduced during the Sung period. But even then the preparation of opium does not seem to have been known. Li Shih-chen mentions its appearance just prior to his time (end of sixteenth century), and quotes a contemporary work, which says that it came from T'ien Fang Kuo (天方國); for this reason it is also called O-fang (阿方). The method of piercing the capsule and scraping off the inspissated juice that oozes out, as practised at the present time, is described in the *Pen Ts'ao* as the method introduced from T'ien Fang(231). Wang Shih-kung in an exhaustive article entitled *The Origin of Opium in China* cites numerous references from ancient literature showing that the use of the poppy shell dates from 934 A.D. and that of the contents of the fruit from 1577 A.D.(232).

The first mention of an opium-smoking divan is from the pen of Kaempfer who, visiting Java in 1689, smoked there "opium diluted with water and mixed with tobacco"; and, as the Dutch controlled Formosan trade from 1624 to 1662, it seems probable that the practice of smoking mixed tobacco and opium was introduced from Java. There is nothing to show at what date opium ceased to be mixed with tobacco for smoking in China. Morse states that the Chinese are the only people who smoke opium, and that opium smoking came in through tobacco smoking. Tobacco was introduced from the Philippines into Formosa, and thence to the mainland of Amoy(233). The earliest Chinese account of it appears to be the *Lu Chou Wen Chi* by Lan Ting-yüan, published in 1724(234). Chao Shu-hsien, author of the *Appendix to the Pen Ts'ao*, who wrote in the Ch'ien Lung period, mentions the prevalence of the opium smoking habit, and describes the manner of preparing and smoking the drug. He speaks of the opium dens, and says that after one has smoked a few times the habit becomes established. As a result of this there is physical and moral deterioration, insomnia develops, sexual degeneracy supervenes, and there is lack

(229) Edkins: *The Poppy in China*.

(230) Porter Smith: *Contributions towards the Materia Medica and Natural History of China*, 1871.

(231) Stuart: *Chinese Materia Medica*.

(232) 李世恭: 中國鴉片考, 東方醫學雜誌, 十三卷七號

(233) Morse: *The Trade and Administration of the Chinese Empire*, p.326.

(234) 藍鼎元: 鹿洲文集

of moral control. The drug is here said to have been brought from Ko-la-pa-hai (噶喇吧海) (Java Sea?), and was said to be produced in Chiao-liu-pa (交喲吧) and Lü-sung (呂宋) (the Philippines). Although it was a prohibited article of commerce, there were those who insisted upon having it, claiming that it increased strength and promoted sleep. As a consequence, consumption was then on the increase. Some had smoked to the extent that they had "broken up the home and destroyed the body." The confirmed opium smoker is described as black-faced, weak-voiced, watery-eyed, with prolapse of the bowels, and prospects of an early death (235).

We quote from Dr. Dudgeon a short summary of the origin of this destructive vice: "Opium-smoking was introduced from Java by the Chinese from Chien-chien and Chang-chow in the early years of the eighteenth century and towards the end of the reign of K'ang Hsi, 1662-1723. The first edict issued against it was in 1729 by the Emperor Yung Cheng and was directed against the practice in Formosa, and was the result of a report of an official sent by K'ang Hsi to inquire into the unseemly proceedings in the island. K'ang Hsi died, and his successor was some six or seven years on the throne before steps were considered necessary to stop the evil there. It had been introduced by people from the above two prefectures on the mainland. From Formosa and these southern ports, the practice spread gradually, and very slowly. As late as the end of the century, the import and consumption of opium, both for medicine and smoking, was comparatively trifling. The use of opium, first as capsules and then as an extract, is of older origin; it was used solely as a medicine. Part came by land through Central Asia by the Mohammedan merchants and travellers, part by sea to Canton, and part also overland from Burma and India. The opium which came overland was for the most part as tribute, and we read in the Ming history of as much as 200 catties for the Emperor and 100 catties for the Empress being presented as tribute. At the time when smoking began, a short bamboo tube filled with coir, opium, and tobacco was the regular mode of insufflation. The present pipe is more modern, and is said to have been invented in the province of Canton" (236).

The manner of taking it is summarised in the following account by a doctor who has paid much attention to the subject and gives with minute exactness the whole process:—

(235) 趙恕軒: 本草綱目拾遺

(236) Dudgeon: *The Evils of the Use of Opium*.

The smoker, lying on his couch or divan, with the pipe, lamp, and other implements on a tray, takes a portion on the point of a wire and warms it carefully over the flame of the lamp. He dips it again into the little jar of opium until the requisite quantity adheres, alternately warming it over the flame and pressing it on the flat bowl of the pipe, turning it over and over and working it carefully on the end of the wire, until it is reduced to the state of a soft solid by the evaporation of a portion of the water. During this process it swells up into a light porous mass from the formation of steam within, and must therefore be heated up to the boiling point of water. When the little bolus has been brought to the exact state fitted for smoking, it is worked into a conical-shaped ring around the wire, the point of the wire inserted into the round hole of the pipe, and, by twirling the wire around while withdrawing it, the opium is deposited on the pipe, the hole in it corresponding to the hole in the bowl of the pipe. The stem of the pipe being applied to the lips and the bowl held over the lamp, the heat of the flame is drawn in over the opium, converting into vapour all the volatilizable material in the bolus. To understand what takes place, it is important to note that, preparatory to smoking, the bolus of opium has been slowly and carefully heated until steam has been generated in its substance. While in this heated state, and with water enough to prevent charring and to form more steam, the flame of the lamp passes over it, converting part of it into the so-called smoke, and leaving a solid residuum known as opium dross, and also as seconds⁽²³⁷⁾.

A new vice, that of subcutaneous injection of morphia, soon followed opium with even more disastrous consequences. Its ill effects are too well known to need reiteration. In recent years a more subtle form of taking opium, that of swallowing or smoking heroin pills, commonly called 'red pills,' came into vogue. It is said the poison is more deadly and more far-reaching than either opium or morphia. It saps the vitality more quickly and the habit is most difficult to eradicate.

On account of its easy access opium forms one of the most common means of attempted suicide. The statistics issued in the report of the Shantung Road Hospital, Shanghai, for the years 1921-1926, record a total of 4,802 cases of suicide. Of these 2,524 or 52.56 per cent were by opium. In other words, more than half of the patients used opium⁽²³⁸⁾. Such is a picture of the appalling

(237) Quoted by Dyer Ball in *Things Chinese*, art. opium.

(238) Maxwell: *Diseases of China*, p.294.

effects of this poison from the medical aspect only. No wonder people call opium the great curse of China.

When a patient has recovered from a serious illness a common practice is to present the doctor with a testimonial table as a grateful acknowledgment of his services. The origin of this custom is difficult to trace. It appears that it was first started in the Sung dynasty (1127-1162). The Empress Hsin-jen suffered from eye trouble which baffled all the skill of the court physicians. An edict was therefore issued calling for doctors of the realm to find a cure. The mayor of Lin An recommended Huang Fu-tan to the Emperor Kao Tsung who brought the doctor to the Tzu Ning Palace, where the Empress under his treatment immediately recovered. Filled with pleasure the Emperor bestowed upon Huang rich presents but these were politely declined. The Emperor then gave him an autographed scroll bearing the two characters "Pure, humble."

The present day testimonials are usually carved in wood about 2 to 3 feet wide and 5 to 7 feet long, beautifully painted. The inscription on the tablet consists of a brief introductory note in small characters and then four big characters in the middle taken from choice allusions from the classics. A specimen is somewhat as follows:

Dr. So and So is deeply proficient in both internal and external diseases. In April this year my mother suffered from abscess of the abdomen. It started with a pimple but within a few hours it grew to the size of a bowl. There was swelling and inflammation; the pain was terrible. Our whole family was thrown into consternation. Doctors, Chinese and foreign, were called in but all failed to give relief. Luckily we secured your help and the danger was averted. Within a week everything became normal. Such skill could only be compared to the two ancient physicians Yü and Pien. My mother wanted me to present you this testimonial tablet so as to show her gratitude. Hope you'll kindly accept it.

BENEVOLENT HEART, BENEVOLENT ART

The third year of Kwang Su.

Humbly presented by So & So,

The tablet is carried to the doctor in his home with music and fire crackers. It is then hung on the wall in a prominent place amidst much rejoicings. Dozens and dozens of these may be seen in hospitals or private clinics. In the old days a doctor's ability was measured by the number of tablets presented to him. But gradually through abuse they were not so highly looked upon; quite often they were acquired by doubtful means. Nowadays because of the changed conditions silver cups or shields with suitable inscriptions have taken the place of the unwieldy and old-fashioned

tablets. The ultra modern way is to insert an advertisement in the daily papers eulogising the skill of the doctor concerned(239).

In the first year of Shun Chih (1644) sacrificial rites for worshipping the ancient physicians were instituted. They were held in spring and autumn every year at the Ching Hui Palace, which is situated on the left side of the College of Imperial Physicians, Peking. The buildings are arranged according to the same general plan used in constructing temples. On both sides of the main hall are anterooms for changing clothes. To the left and right are long corridors which lead to the side halls. In the courtyard in front of the main building is placed a large incense burner. The windows and doors are painted red while the pillars are of variegated colours. In the central hall the figure of Fu Hsi occupies the middle with Shen Nung to the left and Huang Ti to the right. To the east are the altars of Kou Mang (勾芒) and Feng Hou (風后); to the west are Chu Yung (祝融) and Li Mu (力牧)(240). The side halls house the tablets of the ancient physicians, fourteen in each hall, in the following order: The Eastern Hall; Chiu Tai-chi, Ch'i Pai, Kuei Yu-ch'u, Pai Kao, Yu Fu, Shao Yu, Shao Shih, T'ung Chun, Lei Kung, Ma Shih-huang, I Yin, Pien Ch'iao, Ts'ang Kung, and Chang Chi. The Western Hall: Hua T'o, Wang Shu-ho, Huang Fu-mi, Ko Hung, Ch'ao Yuan-fang, Sun Szu-mo, Wei Tzu-tsang, Wang Ping, Ch'ien I, Chu Hung, Li Kao, Liu Wan-su, Chang Yuan-su and Chu Yen-hsiu.

A representative from the Board of Rites acts as master of ceremonies in the central hall assisted by two officials from the College of Imperial Physicians in the side halls. In the twelfth year of Yung Cheng, 1734, all the court physicians and college officials were required to be present at the ceremony. The prayer offered at the service reads: "Great are the virtues of the ancients! They established the art of medicine to relieve suffering humanity. On this day we offer these animals as sacrifice. May the merciful gods drive away all disease, protect our bodies, and grant peace to the country!"(241).

A Chinese prescription is generally written in the following order: It begins with the patient's name and date; then the history in which the subjective symptoms, pulse indications, condition of tongue, and plan of treatment are described; and lastly the inscrip-

(239) See K. C. Wong's article *Medical Testimonial Tablets* in *National Medical Journal (Chinese)* Special Medical History Number in which over 300 different inscriptions are described.

(240) Kou Mang is a tutelary god worshipped in spring; Chu Yung is the god of fire; Feng Hou and Li Mu are two of Huang Ti's ministers.

(241) *Chinese Medical History*, p. 94.

tion. Directions for the number of doses to be taken, the manner of preparing the decoction, etc., are sometimes added at the end. An illustrative example is as follows:

Mr. Ch'en Yün-sheng (陳雲生), 27th day of 2nd moon. The *yin* principle is deficient, dampness having sneaked into the system. The fever is sometimes better and sometimes worse. Mouth dry, appearance emaciated, body weak with wet dreams. The pulse is soft, slippery and rapid, and the tongue yellowish. The cure to be adopted is to reduce the fever, disperse the dampness, and to administer a mild course of tonics.

Take

Scrophuloria	2 mace
Red pachyma cocos	2 mace
Lophatherum elatum	1 ounce
Dendrobium nobile Szechuan	2 mace
Bamboo secretions	2 mace
Hulk of forsythia suspensia	2 mace
Paeonia moutan	1 ounce
Canadensis cryptotaenia	2 mace
Seed of cuscute chinensis	2 mace
Loranthus yadoriki	2 mace
Ligustrum lucidum	1 ounce
Fatsia papyrifera	2 mace

The constituent of the inscription does not differ much from that of a prescription of the west with its basis, adjuvans, corrigens, etc. According to the ancient classification of Ch'i Pai there are seven distinct types of prescriptions which are: *Ta fang* (大方), *hsiao fang* (小方), *huan fang* (緩方), *chi fang* (急方), *ch'i fang* (奇方), *ou fang* (偶方), and *fu fang* (複方) corresponding to large, small, slow, quick, single, double and complex. A *ta fang* consists of one base, two adjuvantia, and nine corrigentia; a *hsiao fang* of one base and two adjuvantia. A *huan fang* is composed of ingredients that act slowly such as tonics, while a *chi fang* is employed for its immediate effect. The *ch'i fang*, *ou fang*, and *fu fang* are named according to the number of substances that enter into the combination.

The drugs and other medicaments are weighed out according to a decimal system as follows:

1 liang or tael	=	40.00 grm.
1 tsien or mace	=	4.00 grm.
1 fan or candreen	=	.40 grm.
1 li	=	.04 grm.

They are wrapped up separately in paper—coarse yellow paper for common drugs and fine white paper for the more costly—and the number of packages depends on the number of articles in the prescription. Certain superstitious practices are observed when decocting the medicine. If they are not followed then the drug will loose its effect.

1. Don't put the medicine on the dressing table.
2. Don't make the decoction in the kitchen.
3. Don't let the packages be opened by other hands; it should be done by one person throughout the process.
4. Don't smell the medicine with the nose.
5. Don't carry the decoction to any distance after it is prepared.
6. River or well water should be used in boiling the ingredients.
7. When decocting the medicine a pair of scissors should be put over the boiler in order to drive away evil spirits.
8. After pouring the finished product into a bowl cover it with a piece of paper and put a pair of chopsticks over it (the two characters for chopsticks 筷子 have the same sound as speedy recovery 快好).
9. After taking the medicine the patient should take a nap.
10. The bowl should be upturned when the medicine is drunk. If there is any left it should be poured on a dog's back.
11. The medicine dregs should be thrown to the middle of the road so that passers-by may tread on them and carry away the disease.

The drug store or pharmacy where the prescription is compounded is an interesting place. Gerald King has given a vivid description of such a one in Shanghai and we can do no better than to quote him fully:—

"Outside, hangs the usual shop sign; inside, a counter is arranged like a bar, so that people can stand at the front and two ends. On one side the spare space is filled up by the presses in which some of the medicines are kept; at the other there is an alcove, in which there is an altar to the God of Healing, where incense burns in a small earth-filled bronze vessel. On the walls above the furniture hang black enamelled boards with golden characters containing the usual sententious apothegms. At the back of the shop are shelves filled with blue and white porcelain jars. The larger ones have square pewter covers: these contain liquids, principally tonics. In the first there is a syrup of pears and other medicines which will ward off the approach of the feebleness of age. Next to it is a distillation which will ensure easy delivery of women. These liquids are all ladled out with the same iron spoon which robs the medicine of any sameness to a patient for if the first dose be ladled out with the spoon which has just been used for stewed onions, and the second time when it has been used for a decoction of asafoetida, a pleasing variety ensues.

"Above are smaller jars, with octagonal based caps. These contain seeds and plants of the more expensive kinds. In front of them are little snuff bottles filled with ready mixed powders. The drawers which run round two sides of the shop are filled with an odd assortment of cures.

"The chemists who prepare the medicines do not have to undergo any specific training. They are apprenticed young, and during their three years' apprenticeship they pick up the general run of the trade. As the drugs are not of any constant strength, and since no one knows what is the matter with the patient or what is the precise effect of the drug he is taking, small errors in compounding do not cause any inconvenience. The qualities most in request are willingness and *savoir faire*, and if a lad displays these he will, when his articles are out, become a fully fledged assistant, and in time may rise to a partnership or start on his own. The shops are not connected with the doctors, and do not pay the latter any percentage on their prescriptions. A large trade is done in ready prepared medicines and advice is given free to those who are too poor to afford a doctor. The small plasters so commonly used on the temples to reduce headache are very cheap, and there are a large number of packets of

medicines of various kinds waiting purchases, which take the place of our pills, blood mixtures, and cough tonics" (242).

Self medication is the rule rather than the exception. Anyone who reads and can wield a pen is supposed to be able to prescribe. Meddlesome neighbours will suggest one remedy after another, backed by personal experience, and the undecided parents will swallow the advice *in toto* to the detriment of the poor patient. Old grandmother will drug her grandchild with every kind of obnoxious preparation that she can think of. If unsuccessful she will try her magic arts, her superstitious practices, reviling or invoking the spirits according to her belief as to the cause of the sickness. And lastly priests may be called in to complete the régime of treatment.

A very common custom is to go to the temples to pray for holy medicine. In this practice, faith is placed in spiritual help more than in medicine for sometimes none is given. As a rule this is resorted to as a last resource, a fair trial being first given to rational treatment, but often it is prescribed at the very beginning of an illness when the patient's family is very superstitious. Propitious days, commonly the first and fifteenth day of the month, are selected for the commencement of the cure. In case of emergency, however, such things are not taken into account. A fasting beforehand, that is, the adoption of certain modes of living in which no meat is allowed, the reciting of prayers, the thorough washing of the body and other minutiae—are supposed to improve one's chance of getting the blessing, for the gods will only listen to the good and the clean. After the burning of joss and other offerings, the believer takes a tube from the altar in which is placed a bundle of numbered sticks, passes it over the joss fumes several times, shakes it until one falls to the ground. This is picked up, the number read and a corresponding slip of paper given on which is printed the prescription. The following are a few specimens secured from the famous Ling-yin Temple near West Lake, Hangchow, where there is more system, a greater variety of prescriptions, and fuller directions for taking the medicine than in most temples. Divisions are also made for internal or external diseases, for males or females, and for adults or infants.

For adult males. Divining slip No. 80.

Pachyma cocos	2 mace
Pachyrhizus thunbergianus	1 mace
Citrus nobilis, ripe peel	2 mace
Rehmanrua gentinosa	2 mace
Atractylis	1 mace
Areca catechu (betel nut)	8 candareens
Glycyrrhiza	1 mace
Sig. Take three doses.	

On the top of the prescription is printed the following rhyme:

All monks and taoists are the same,
What's your disease they know;
Here's an effective remedy
To you I now will show.
All their commands and rules observe,
Try never to forget;
For if you disobey this hint
A short life you will get.

Another prescription, divining slip No. 14, for diseases of women consists of the following ingredients:—

Tricosanthes multiloba	1 mace
Citrus nobilis	1 mace
Pinellia tuberifera	1 mace
Glycyrrhiza	1 mace

Sig. Take two doses.

On it is a verse to this effect: "Oh foolish man! Why doubt and hesitate? There is no harm in taking this medicine. It will surely cure you."

The above can be dispensed at any drug store, but sometimes the prescription contains some secret remedies prepared by the monks and to be had only from them. Here is an example:—

Divining slip No. 78.

Take at once "Universal Life Saving Powder" and you will be cured immediately.

On examination this powder turns out to be some ashes from the incense pot!

A pernicious custom is footbinding. The origin of this institution is subject to debate but it appears to be first mentioned in connection with Hou Chu of the Southern T'ang dynasty in the first part of the tenth century. Maxwell's *Diseases of China* (1929) contains a good account of this subject which we will quote as follows:

As a custom, it is more inconvenient than dangerous, and its evils arise rather from the limitations to bodily exercise which it imposes than from the local diseases which it produces, and which have been greatly exaggerated. The practice consists in the application of a short, heavy bandage, neatly and tightly bound to the feet of growing girls, beginning sometimes as soon as the third or fourth year in the better-to-do families, where the utmost result is sought; later, in the lower classes, where a certain degree of household labour must be allowed for.

In the process of binding the great toe is merely compressed, but allowed its extension, or slightly elevated. The other four toes, however, are bent under the foot, where they are eventually walked on and their compression and atrophy enhanced thereby to such an

extent that they often resemble little more than flabby appendages pressed deeply into the sole of the foot. The heads of the metatarsals are tightly drawn down in apposition to the tuberosity of the os calcis, so that the utmost arching of the instep is attained and the os calcis brought into a vertical position in the direct line of extension with the bones of the lower leg. The metatarsals often attain a position almost parallel to the same line. The tarsal bones are bent over and crowded out of existence, in extreme cases the patient walking on the tip of the os calcis, the distal end of the first metatarsal and the plantar surface of the great toe and the dorsal surface of the others.

When a foot is thus shortened and in addition, owing to constant pressure and insufficient circulation, fails in great measure of development, the plantar length thereof may be as short as 3 inches, or a little less; though the average bound foot is much larger than this. In walking the weight is borne upon the extremities of the arch and progression is slow and halting, and equilibration uncertain and the walker soon tires. The appearance is of one walking on short stilts, or two peg legs, the muscular development of the legs being greatly reduced and the legs often appearing as mere sticks.

During the initial stages footbinding is intensely painful, especially if delayed and the child of five or six years of age when it is begun. At such times as the bandages are changed, the screams of the children are often pitiable. Later on the support is necessary and grateful, and not easily dispensed with. A foot which is once deformed will never recover its normal growth, but if unbound in early girlhood will attain some approach to the normal and a certain amount of development may be hoped for. As a cause of disease it may be readily understood that a poorly nourished, anaemic extremity with deformed bones and abnormal strains is a favourable site for tubercular deposits, and tubercular bone disease in bound feet is excessively common. This is, however, the chief pathologic evil of the practice. In poorly nourished children and in all cases of injury there is a very positive tendency to gangrene and death of the part, and amputation is frequently called for.

A poetical term for a woman's bound feet is "golden lilies (金莲)," said to date from Tung Hun-hou (東昏侯) A.D. 500, who said of his dancing concubine: "Every step makes a lily grow." The bound feet formed indeed the highest sophistication of the Chinese sensual imagination. Men had come to worship and play with and admire and sing about small feet as a love fetish. The cult of the "golden lily" belonged undoubtedly to the realm of psychopathology; when one remembers that really small and well-shaped feet were rare it is easy to understand how men could be moved by exquisite poetry.

Fang Hsien of the Manchu dynasty wrote an entire book devoted to this art, classifying the bound feet into five main divisions and eighteen types. Moreover, a bound foot should be (a) Fat, (b) Soft and (c) Elegant; so says Fang: Thin feet are cold and muscular feet hard. Such feet are incurably vulgar. Hence fat feet are full and smooth to the touch, soft feet are gentle and pleasing to the eye, and elegant feet are refined and beautiful. But fatness does not depend on the flesh, softness does not depend on the binding and elegance does not depend on the shoes. Moreover, you may judge its fatness and softness by its form, but you may appreciate its elegance only by the *eye of the mind*.*

This practice was forbidden by Emperor K'ang Hsi in 1665 but the prohibition was withdrawn four years later. Chinese scholars like Li Ju-chen, Yuan Mei (1716-1799) and Yü Cheng-hsieh (1775-1840) condemned this monstrous and perverse institution. But the custom was not abolished until the Christian missionaries led the crusade. A Natural Foot Society (天足會) was formed in 1885 with Mrs. Archibald Little as president. It undoubtedly had a very large share in creating a strong public opinion against this practice and it is now practically dying out especially after the establishment of the Republic.

Another bad custom is the practice of ear cleaning by Chinese barbers. It is one of the most common causes of ear infections and abnormal growths in the auditory canal as well as furunculosis and diffuse inflammation of the external meatus. A. M. Dunlap has wide experience with the diseases arising from this so-called ear cleaning process by barbers. He says: "The barber understands how to pull the ear upward and backward in order to straighten the canal. He uses, of course, no head mirror, but if he is in a room he will stand so that the light from the window passes over his shoulder. His first manipulation consists in shaving all the hairs he can see in the external canal by using a long narrow knife. Then, by means of long forceps and curved needles, he picks away the particles of hair and epidermis which do not come with the knife. A feather ball at the end of a slender piece of bamboo is then twirled in the ear to remove the finer particles.

Aside from the accident of cutting away too much, the ear drum may be punctured with the long needle. Many a patient has volunteer-

*The above is from *My Country and My People* by Lin Yü-tang, the noted humorist who remarked that "women were not only willing but actually glad to be fashionable and à la mode at the expense of bodily comfort is nothing peculiarly Chinese. As late as 1824 English girls were willing to lie on the floor while their mothers by foot and hand were helping to squeeze their bodies inside the whale bones. The tiptoe dancing of the Russian ballet is but another example of the beauty of human torture which may be honoured with the name of an art."

ed the information that the barber gave him pain at his visit, since which time he has had a running ear. It is conceivable that a needle, which is never sterilized, might cause an infection if thrust through the ear drum. Perhaps the most common sequel of this pernicious practice is the growth in the external canal of soft granulations, which later become quite firm. These condylomata come, undoubtedly, as a result of the repeated irritation with the knife and the accompanying infection.

The barber is not to be blamed for all the injuries to the ear which result from manipulations. Ear-dusters are sold broadcast by street hawkers for use "in the home." The ear spoon forms a part of every Chinese married woman's head-dress. It is made of jade, ivory, gold, silver or brass, according to her station in life, and used for every purpose from ear cleaning to tooth picking".*

The manner of reckoning ages is peculiar to this country. In spite of the adoption of the new calender by the Nationalist Government the ordinary people still stick to the old method. When a child is born, say on the 30th of the 12th month, he is considered to be two years old on the first day of the next year while in fact he is only two days old. Thus to get the actual age a simple rule is to deduct one year from the stated number. The age of a person is usually computed in terms of the Twelve Branches or Duodenary Cycle of Symbols (十二支) and the Ten Stems (十干). These form a cycle of sixty combinations called *Chia Tzu* and have been employed from a period of remote antiquity to designate the numbering of years. The Twelve Branches again are represented by twelve animals as follows:

- | | | | | |
|---------|-------|-------------------|---------|-----|
| 1. (子) | Tzu | appertains to the | Rat | (鼠) |
| 2. (丑) | Ch'ou | " " | Ox | (牛) |
| 3. (寅) | Yin | " " | Tiger | (虎) |
| 4. (卯) | Mao | " " | Hare | (兔) |
| 5. (辰) | Ch'en | " " | Dragon | (龍) |
| 6. (巳) | Szu | " " | Serpent | (蛇) |
| 7. (午) | Wu | " " | Horse | (馬) |
| 8. (未) | Wei | " " | Goat | (羊) |
| 9. (申) | Shen | " " | Monkey | (猴) |
| 10. (酉) | Yu | " " | Cock | (鷄) |
| 11. (戌) | Hsü | " " | Dog | (犬) |
| 12. (亥) | Hai | " " | Pig | (猪) |

Hence it is common for a Chinese to give his age by stating the animal belonging to his birth-year. The system is found in other lands also, though with variations in the list of animals. Its use in China may be traced as far back as the Han dynasty or second century A.D. but it was not until the era of Mongol ascendancy that the usage became popular. Some are of the opinion that it was introduced at the time of the Tartar immigration.

*China Med. Journ. Vol. 32, pg. 159.

More than any other human invention of this nature, the drinking of tea has coloured the daily life of the Chinese as a nation, and gives rise to the institution of tea-houses which are approximate equivalents of Western cafés for the common people. People drink tea in their homes and in the tea-houses, alone and in company, at committee meetings and at the settling of disputes. They drink tea before breakfast and at midnight. With a teapot, a Chinese is happy wherever he is. This general adoption of tea as a beverage is not only a good social custom but also a beneficial hygienic measure. It saves the people from many intestinal diseases caused by contaminated water, such as typhoid, dysentery, cholera, diarrhoea, etc. The present day habit of taking cold drinks and ice cream is a common source of infection. It seems that the ancient Chinese were wiser, in this respect, than we moderns. When tea drinking first originated is shrouded in obscurity.

Apart from mere traditions, the earliest account of tea drinking dates from the sixth century A.D., the practice becoming prevalent in the seventh century. In the T'ang dynasty a *Tea Classic* (茶經) was composed by Lu Yü (陸羽). It consists of three chapters giving the origin of its cultivation, the method of brewing and the utensils required. Lu Yü was such a great connoisseur that he was deified as the God of Tea by the tea merchants. It is significant that Marco Polo made no mention of the use of tea in China. The Dutch in the seventeenth century introduced it into Europe. The English first began to drink it in the middle of the seventeenth century, receiving it from agents in Java. Whoever it was the man who introduced this method of drinking tea is a benefactor of the human race.

CHAPTER XXVI

EARLY ANATOMY, MATERIA MEDICA, MEDICAL JURISPRUDENCE, INTERNAL DISEASES, OBSTETRICS, OPHTHALMOLOGY, PARASITOLOGY AND SURGERY

It was but natural that the attention of the first foreigners coming to China was rivetted upon what seemed to them unusual and bizarre in the Middle Kingdom. Urged as they were by the desire to give to their compatriots at home glaring accounts of the wonders they were witnessing, they drew pictures out of perspective by not properly evaluating, or else entirely neglecting, worthy achievements. Led—perhaps subconsciously—by the tendency to depict things in contrast to the progress made in Europe, they also omitted to remember that the errors of Chinese scientists had been shared in the past by their European *confrères* and had, in some instances, been given up in the West but a comparatively short time ago.

Many proofs of the above contentions can be found in regard to Chinese medicine. Emphasis was laid, for instance, upon absurd and unsavoury articles included in the Chinese pharmacopoeia. It was forgotten that European drug-stores were not much better in this respect than those of China(243). Worse still, with a few praiseworthy exceptions, most of the foreigners were led to look with general distrust upon the Chinese materia medica. Thus it was only slowly realised that many of its articles were identical in nature or in action with remedies used in Europe and America while some, which were unknown in the West, exhibited most valuable properties leading later to their general acceptance.

Likewise, few foreigners were able to look beneath the surface of Chinese habits and customs. The fact that these were often based upon sound principles of health preservation was disregarded. We need only mention the Chinese habit of drinking tea in preference

(243) We recall having read in a German magazine a description of the medicine chest Frederic the Great took with him to the field. Many of its contents would have graced a Chinese drug-store!

to unboiled water and the eating of well-cooked meat(244). It is not generally realised—when Peking was founded about a thousand years ago—a system of drainage was introduced. Thoroughly overhauled and improved by the second Emperor of the Ming Dynasty, Yung Lo (A.D. 1403-25), it continued to function so well that Dudgeon, writing in 1871(245) said:—"In regard to drains . . . Peking stands unrivalled among the cities of the world." He also bestowed much praise upon the water supply conveyed from the Western Hills by open granite gutters to the Imperial city as planned by the founders of Peking and improved by their successors.

While these examples prove our point, we must add that recently a gratifying change has taken place. The history of Chinese medicine, formerly just a hobby of scholars, has now become the subject of universal interest. As a consequence its general features are reviewed according to their proper merits and a hopeful beginning has been made with studies upon special subjects which did not receive sufficient attention in the past. Notable progress has been made especially in regard to the history of anatomy, materia medica, surgery, midwifery and women's diseases, of eye diseases, of parasitology and other diseases. And since it was not possible to do full justice to these researches in the foregoing chapters we propose to analyse them now.

1. ANATOMY

Dissection of the human body was seldom practised by the ancient Chinese. This may be accounted for by the traditional belief in the sacredness of the body which should not be tampered with under any circumstances. "Our body, skin and hair," says the *Filial Classic*(246), "come from our parents. We must not mutilate them." Under such conservative teaching naturally anatomy could not make much headway hence glaring mistakes were often found in the conception of the body. Yet the desire to pry into the secrets of nature could not be entirely suppressed. Sporadic attempts by medical men as well as by laymen had been made at different times to find out the exact condition of the internal organs.

The earliest mention of dissection in China was in the *Ling Shu* (247) circa 1000 B.C. which says: "It is beyond human ability to measure the height of the sky or the expanse of the earth. But

(244) An appreciation of the hygienic importance of Chinese habits and customs is to be found in *The Practice of Hygiene in China* by Wu Lien-teh, National Review, Shanghai, 1918.

(245) Customs Med. Rep. No. 2 (1871), p. 78 & foll.

(246) 孝經身體髮膚受之父母不敢毀傷

(247) 靈樞經水篇

as to an eight feet person with flesh and skin it is not difficult to get the surface measurements. After death the body may also be dissected and a general idea obtained of the appearance, size and capacity of the viscera, the length of the blood vessels, the condition of the blood, and the amount of pneuma." Apart from this single statement no other references of this nature are found in any medical treatise until the Sung dynasty. But in ancient contemporary literature not a few accounts of dissections or postmortems are recorded. According to the *Yin History* (248), Emperor Chou (1122 B.C.) was an oppressive and licentious ruler. Wei Tzu (微子), having repeatedly remonstrated with him but without avail, left the service. Pi Kan (比干), however, made strong admonitions which angered the Emperor who said, "I have heard that the heart of a holy man has seven openings. Is it true?" Thereupon he ordered Pi Kan to be dismembered in order to see his heart. It is obvious that this story was not written with any medical purpose but solely to denounce the cruelty of the Emperor.

The next reference to dissection is found in the *Han Annals* (206 B.C.). The *Biography of Wang Mang* (249) states that "Wang-Sun Ching (王孫慶) of the rebel forces of Chai I (翟義), having been caught, the Emperor ordered the court physician and a skilful butcher to dissect the body. Measurements were then made of the internal organs and bamboo rods inserted into the blood vessels to see where they began and where they ended for the alleged purpose of curing disease." This is perhaps the first real experiment at dissection in history for it was conducted by a doctor and solely with the object of determining the condition of the viscera. Emperor Wang seemed to have had an interest in anatomy and had he remained longer on his throne more light might have been shed on this subject. Unfortunately, being a usurper all his acts and words, whether right or wrong, were condemned by the people. Even this limited search for knowledge was held up by historians as evidence of his misrule.

A somewhat similar account is given in the *Pin Tui Lu* which says: "In Kwangsi they killed the robber Ou Hsi-fan (歐希範) and his followers and in the course of two days dissected 56 persons. Ling Chien (靈簡), the coroner of I Chow, carefully inspected the bodies and made drawings of them" (250). This incident was also

(248) 史記殷本紀 *Yin History*.

(249) 後漢後王莽傳 *Han Annals*, Biography of Wang Mang.

(250) 賓退錄 *Pin Tui Lu*.

recorded in the *Tung Tsai Chi Si* (251) and the *Meng Tsai Pi Tan* (252). Both of these speak of an Ou-yang Hsi-fan's *Pictures of the Five Viscera*. It is said that during the reign of Ch'ing Li, Governor Tu Chi secured the surrender of the robbers Ou-yang Hsi-fan, Meng Ken and several tens of others. All these captives were killed and their abdomens opened and the kidneys and intestines cut out. The Governor ordered the doctor and artists carefully one by one to make pictures of the organs. The *Biography of Tu Chi* gives a slightly different version saying that Ou Hsi-fan induced Meng Ken to rebel. When Meng surrendered, Governor Tu killed over seventy of his men and eventually captured Ou Hsi-fan whom he cut into small pieces and distributed to the aborigines. The vessels, ligaments, organs and viscera of the seventy odd bodies were gathered together and examined (253).

In Chun Chai's *Readings in Literature* there is mentioned a volume of anatomical drawings entitled *Atlas of Truth* by Yang Chieh. Here we find that "during the Sung dynasty about the time of Tsung Ning many bandits were executed at Szu Chow. The prefect Li I-heng (李夷行) accompanied by doctors and artists personally examined the viscera and made detailed pictures of them. He compared these with ancient drawings and found them superior to those of Ou Hsi-fan's. This book was considered invaluable to the medical profession" (254). As only dead bodies of bandits and rebels were used for dissection it gave rise to the erroneous impression that it was a kind of punishment meted out to criminals and henceforth nobody was willing to give up his body for scientific investigation. It appears that Ou Hsi-fan's *Anatomical Pictures* and Yang Chieh's *Atlas of Truth* were still extant in Chun Chai's time but at the present time these two books have been lost. Even the *Four Literary Treasuries* made no mention of these treatises which reflects on the lack of interest in exact science by the Chinese. However, were they still in existence their inaccuracies would be the same as those of the ancients, for the *Anatomical Pictures* were not as good as the *Atlas of Truth*; furthermore the latter varied but little from the ancient books. Some are of the opinion that the *Atlas* is better than previous works but because of the traditional reverence for antiquity Kung Wu did not care to make any contrary remarks.

(251) 宋范鎮東齋紀事

(252) 鄭景望聚齋筆談

(253) 吳公武郡齋讀書誌

(254) 吳公武郡齋讀書誌 Chun Chai: *Readings in Literature*.

According to the *Chih Shu Yuan Chu* there was a legend to the effect that Hua T'o had supernatural vision. He placed a naked body under sunlight and could see the internal organs. From this he made pictures of them so that people might make use of them as a guide for treatment(255).

Another instance of dissection is recorded in Chang Kuo's *Medical Miscellany*. Chang Chi (張濟), an army doctor, was skilful in the art of acupuncture, having obtained the secret from an extraordinary man. He could dissect a corpse and expose the tendons and blood vessels with precision. Owing to famine and plague cannibalism was practised. He tried acupuncture on 170 dead bodies with good results(256).

The controversy regarding the existence or not of the *San Chiao* (三焦) or "Three Burning Spaces" sheds some indirect light on this subject. What the *San Chiao* really is no two authorities seem to agree. Huang Ti, Pien Chiao, Wang Shu-ho, Sun I-kuei and others contend that it is without form while Chen Wu-chi, Yü Po and Chang Chih-pin hold that it exhibits definite structure. What interests us are not the academic discussions of the different writers but the actual observations made by two of the contestants. Chen Wu-chi, author of the *San Yin Fang*, cites the case of Hsu Tun, a learned doctor of the Sung dynasty, who stated that during the famine at Tsi Kingdom, cannibalism was found among the beggars. There was one corpse with skin and flesh gone and only the bones and arteries left. When he examined the internal organs he discovered below the right kidney and opposite the bladder a piece of fatty membrane as large as the palm of a hand. Two white vessels emerged from the middle of it which went upwards alongside the spinal column into the brain. Chen Wu-chi believed that this was what the Taoist called the 'spinal double gate' and that Hsu did not realize that this membrane was the *San Chiao*. Opposing this view Sun I-kuei, in the *I Chi Hsu Yu*, quotes the words of Ho I-yang who says: "In my younger days in the army, I opened the belly of many bandits to examine the viscera. The human heart was larger and longer than the pig's; the upper end not pointed but flat. The large and small intestines did not differ from those of the pig but there were more red veins over the small intestines. The bladder was a real urinary reservoir. The rest of the organs corresponded to that described in the *Nei Ching*. There was, however, no such so-called fatty membrane as large as a hand."

(255) 赤水玄珠

(256) 張果醫說 Chang Kuo: *Medical Miscellany*.

But the most remarkable instance of observation on dissection on record is that by Wang Ching-jen. In a little work of two volumes called *I Lin Kai Ts'o* or Correction of Medical Errors published in the 29th year of Tao Kwong i.e. 1850 A.D., he exposed the alleged errors and inconsistencies of the ancient writers regarding anatomy. He further described how he tried for over forty years to get at the truth by actual observations. "In the 2nd year of the reign of Chia Ching (1798 A.D.) about the beginning of spring, I happened to be travelling to Tao Ti Chun, Lanchow. An epidemic of measles and dysentery was raging among the children at the time and nine-tenths of the afflicted died. Most of the poor people wrapped up their dead in mats instead of putting them in coffins and buried them. According to the custom of the place, the bodies were not buried deep in the ground in order that the dogs might eat them so that subsequent births might be spared. Thus every day in the public burying place there were over 100 such exposed bodies. Daily I rode past on horseback. At first I could not help holding my nose but on thinking of the mistakes made by the ancients because they had not seen the viscera, I did not try to avoid the bad odour but on the contrary I went to the burying place every morning. I closely examined the internal organs of those that were exposed. The dogs ate up the liver and heart mostly but left the stomach and intestines. Only about three out of ten bodies were complete. For ten consecutive days I examined over thirty perfect bodies. In this way I discovered that the ancient drawings as compared with actual human organs were entirely different, even the various parts did not agree."

Unfortunately, many of the corrections were more faulty than the original. Wang's fundamental error lay in his mistaking the arteries for air vessels—an error he shared with the European investigators before Harvey. The book, though not of much value, is full of ingenious ideas, his opinion regarding the cause of hemiplegia and the brain as the center of thought being specially interesting. His was certainly a scientific spirit. He showed rare courage, originality, and perseverance in the pursuit of knowledge—traits which were often absent in Chinese writers. He strongly condemned those who without actual observation hastily put down in writing what was mere guess work to the detriment of later investigators. "To write a book without knowing thoroughly the internal organs is it not comparable to a man speaking in a dream? To treat a disease without knowing thoroughly the internal organs how does it differ from a blind man groping in the dark?" he asked. In the last paragraph of his preface were these words: "I have had these figures drawn according to my own ideas, not with the purpose of showing that the ancients were wrong, or that posterity may re-

member me, for I do not care whether posterity blackguards me or not. My only desire is that the medical profession may see the illustrations and clarify their minds so that they may understand at a glance how to treat disease intelligently."

Wang's work, although known in all parts of the country, has not produced any marked effect upon the stereotyped ideas of his contemporaries nor led to further enquiry and investigation. Nevertheless, he is sometimes styled the 'reformer of Chinese medicine.'

As to postmortem examinations these are practically unheard of in China. Throughout her long history only the following few cases are on record.

1. The *Three Kingdoms* mentions a case in which a patient suffered from continuous abdominal pain. Just before death he instructed his son to open up his belly when life ceased to exist to see what was the exact cause of his trouble. The son obeyed his orders, cut open the abdomen and found a copper instrument (257).

2. Tang Hsi went to the north village to drink. On his return he contracted an illness in which he vomited ten worms. When at the point of death he told his wife to open his abdomen after he died so as to find out the cause. This she did and discovered that all the internal organs had rotted (258).

3. During the reign of Yung Hui a monk by the name of Wei Chih suffered from hiccough which prevented the ingestion of food. He told his disciples to cut open his throat and chest after his death to see what was there. Eventually he succumbed to the disease and his disciples, opening his chest, saw a thing resembling a fish with two heads and scales all over its body. They placed it in a bowl and the thing jumped about. Out of fun they put into the bowl several kinds of food which immediately dissolved. It was midsummer. There were plenty of aniline dyes around. One monk threw a little of this into the vessel. The thing then ran round and round and suddenly turned into water (259).

4. The wife of a salt labourer, Chang Sze, who married Koo Shou when young had given birth to five children. In 1310 she again became pregnant but when the time arrived, the child would not come out in spite of seven days of pain. After this she returned to normal and remained so for years. She repeatedly told her people to burn her body after she passed away so that the nature of her disease might be ascertained. In October 1350 A.D. contractions of the uterus suddenly came and the pain was so severe that she died

(257) 三國志 *The Three Kingdoms*.

(258) 沈約宋書 *The Sung Annals*, by Shen Yao.

(259) 廣五行記

in great agony. After two days her family complying with her last request burnt the body and discovered the placental cord was closely woven around the fetus. On opening it, they found a boy with the bones of the chest as hard as steel. The pregnancy lasted 40 years, the woman being born in 1274 and died at the age of 77 (260).

5. A millionaire named Hsü had a clever boy who died of the "fu" 疔 disease when six years old. Subsequently he had three other sons but, strange to say, all of them died of the same malady. Hsü was getting old and at the death of his third boy, he wept bitterly over the corpse. He ripped open his dead boy's belly and removed from it a mass shaped like a triangular chestnut. There was a mouth in this thing which could breathe in and out. He hung it on a tree and let it dry with the sun and wind. Whenever it came into contact with any greasy substance, the mouth could still open and shut as before (261).

It may be noted that all these so-called autopsies were not conducted by medical men hence nothing of value can be added to our knowledge. In enumerating the above references the fact should be borne in mind that dissections and postmortems were not recognized as a branch of study and received scant consideration from native doctors.

2. MATERIA MEDICA

The *Pen-Ts'ao* (本草) or *Materia Medica* has a history as old as that of the Chinese race. It has been reckoned that at different times from that of Shen Nung to the end of the Ch'ing dynasty over 100 special books on this subject have appeared, of which we shall make a brief survey below.

The *Pen-Ts'ao Ching* (本草經) or Herbal is supposed to be the most ancient treatise on Chinese drugs. Various theories have been advanced as to the date and author of this ancient treatise. The names of Huang Ti, Shen Nung, I Yun, Huai Nan-tzu, Chang Chung-ching, Hua T'o, etc. have been mentioned, but none has been supported by sufficient evidence. The most one can say is that about the time of the Western Han dynasty 206 B.C.-25 A.D. there appeared a medical plant-collection entitled *Pen-Ts'ao Ching* and that probably it was not the work of any one person but a compilation from various authors. Tradition ascribes it to Shen Nung, a legendary emperor who ruled in 2838-2698 B.C. It is a little work of three volumes, containing 365 drugs which are classified under three headings: superior, medium and inferior. This book, however, was not men-

(260) 元人說部

(261) 新齊譜

tioned by the ancient records and its existence was not known until the Han dynasty. In ancient times before the invention of writing the art of medicine was transmitted from one generation to another by oral instruction. When the remedies had multiplied and facilities for recording them had been discovered, the material began to be collected and to appear in book form. And because most of the material was of plant origin it was called the "Pen-Ts'ao" or Herbal.

The *Ts'ai Yao Lu* (采藥錄) or *Notes on the Gatherings of Herbs* is a small treatise of two volumes by T'ung Chun (桐君), a subject of Huang Ti. It is no longer extant.

In the Liang dynasty 502 A.D. T'ao Hung-ching (陶弘景) revised the original *Pen-Ts'ao* and published the book in seven volumes under the title of *Ming I Pieh Lu* (名醫別錄). The number of drugs totalled 730, doubling that of Shen Nung's. The additions were taken from famous physicians who lived since Han. Tao Hung-ching submitted the book to Emperor Wu Ti, whose sanction made it the first official pharmacopoeia of China.

Four other works appeared about this time. They are the *Lei Kung Yao Tui* (雷公藥對), in two volumes, by Hsu Chih-ts'ai (徐之才); *Li Shih Yao Lu* (李氏藥錄), in three volumes, by Li Tang-chih (李當之); *Wu Shih Pen-Ts'ao* (吳氏本草), in one volume, by Wu P'u (吳普), a pupil of Hua T'o, the great surgeon; and the *Lei Kung P'ao Chih Lun* (雷公炮炙論), in three volumes, by Lei Hsiao (雷斅).

The next important event in the field of materia medica was the publication of the *T'ang Pen-Ts'ao* (唐本草). Emperor Kao Tsung in 656 A.D. appointed a committee of twenty-two to revise Tao Hung-ching's edition, resulting in the addition of 114 new drugs and extension of the work into 53 volumes. The *Shu Pen-Ts'ao* (蜀本草), or *Materia Medica of Szechwan*, in 20 volumes, was composed by Han Pao-sheng and others who based it on the above, enlarging and adding pictures or diagrams to it. This is the first illustrated book of its kind. Another valuable work was the *Pen-Ts'ao Shih I* (本草拾遺) by Chen Ts'ang-chi (陳藏器) in 10 vol. It was frequently quoted by later writers. Li Shi-chen mentioned ten other treatises written during the same period but these were mostly obscure and unimportant.

Under the Sungs several Imperial editions of the *Pen-Ts'ao* were published. In 973 A.D. Emperor Tai Tsu appointed nine of the most able medical officials to compile the *K'ai Pao Pen-Ts'ao* (開寶本草). 133 new drugs were inserted. In 1057 A.D. Jen Tsung ordered the court physicians to make further revisions and compose the *Chia Yu Pu Chu Pen-Ts'ao* (嘉祐補註本草). A book of illustrations, *T'u Ching Pen-Ts'ao* (圖經本草), was added later.

The pictures were gathered from different provinces by Imperial decree and edited by Su Sung (蘇頌). In 1108 A.D. T'ang Shen-wei (唐慎微), having written the *Cheng Lei Pen Ts'ao* (證類本草), presented it to Emperor Hui Tsung who changed the title to *Ta Kuan Pen-Ts'ao* (大觀本草). The *Pen-Ts'ao Pieh Shuo* (本草別說), the *Pen-Ts'ao Yen I* (本草衍義), and the *Jih Hua Chu Chia Pen-Ts'ao* (日華諸家本草), were three more productions of this dynasty. They were chiefly commentaries or compilations of previous works.

The Chin and Yuan dynasties enumerate six books on materia medica, which are:—Chang Yuan-su's *Chen Chu Nang* (珍珠囊), Li Kao's *Yung Yao Fa Hsiang* (用藥法象), Wang Hao-ku's *T'ang Yeh Pen-Ts'ao* (湯液本草), Wu Jui's *Jih Yung Pen-Ts'ao* (日用本草), Hu Shih-ko's *Pen-Ts'ao Ko Kuo* (本草歌括), and Chu Chen-heng's *Pen-Ts'ao Yen I Pu I* (本草衍義補遺).

The Ming dynasty is the most glorious in the history of the pharmacopoeia of China. Of minor works that precede the *Great Herbal* mention may be made of the following: *Pen-Ts'ao Fa Hui* (本草發揮), *Chiu Fang Pen-Ts'ao* (救荒本草), *Keng Hsin Yu Ts'e* (庚辛玉冊), *Pen Ts'ao Chi Yao* (本草集要), *Shih Wu Pen-Ts'ao* (食物本草), *Shih Chien Pen-Ts'ao* (食鑑本草), *Pen-Ts'ao Hui Pien* (本草會編), and the *Pen-Ts'ao Meng Ch'uang* (本草蒙筌). But the most important contribution is the *Great Herbal* generally known as the *Pen-Ts'ao Kang Mu* (本草綱目), which has been fully dealt with in Chapter XVII.

Three other works of the same dynasty which deserve notice are the *Shen Nung Pen-Ts'ao Ching Su* (神農本草經疏), *Pen-Ts'ao Cheng Ya Pan Chieh* (本草乘雅半偈), and *Pen-Ts'ao Shu* (本草述). The first is a book of 30 vols. compiled by Miu Hsi-yung (繆希雍). The material is divided into ten classes, namely minerals and stones, grasses, trees, humans, animals, fowls, fishes and worms, fruits, grains, and vegetables. The second work was compiled by Lu Chih-i (盧之頤) and consists of 10 vols. The author was the son of Lu Fu (盧復), a celebrated doctor of Wan Li's time. At the age of 28 to fulfil his father's dying request, he commenced to write the *Pen-Ts'ao Ch'eng Ya Pan Chieh* (本草乘雅半偈) which was completed after 18 years of diligent labour. He lost the sight of his right eye after this and when he finished the *Expository of the Golden Chamber* his left eye also became blind. The selection of material for this book was done rather carefully and the identification of plants is fairly accurate. The third *Pen-Ts'ao Shu*, written by Liu Jo-chin (劉若金), is a compilation of 32 vols. It contains over 480 drugs. The arrangement is entirely different from the *Great Herbal*. Yang Shih-t'ai (楊時泰), published an abridged edition of it entitled *Pen-Ts'ao Shu Kou Hsüan* (本草述鉤玄).

The Ch'ing dynasty is noted for literary research in the classics. Scholars spent most of their time in deciphering the character of absolute words or the meanings of particular phrases. As a result, a revival of the old learning was noticed and a similar influence was felt in materia medica. Three types of writings may be distinguished—the expository, the standard, and the simplified. The *Pen-Ts'ao Ching Su Chih Yao* (本草經疏輯要) by Wu Shih-k'ai (吳世鎔) and the *Pen-Ts'ao Ching Su* (本草經疏) by Chou Shu (鄒澍) belong to the first group; the *Pen-Ts'ao Wan Fang Chen Hsin* (本草萬方鍼線) by Tsai Li-hsien (蔡烈先), the *Pen-Ts'ao Kang Mu Shih I* (本草綱目拾遺) and the *Pen-Ts'ao Lei Fang* by Nien Hsi-yao (年希堯), come under the second group; the *Pen-Ts'ao Feng Yuan* (本草逢原) by Chang Lu (張璐), the *Pen-Ts'ao Pei Yao* (本草備要) by Wang Ang (汪昂), the *Pen-Ts'ao Tsung Hsin* (本草從新) by Wu I Lo (吳儀洛) and the *Shen Nung Pen-Ts'ao Ching Pai Tsung Lu* (神農本草經百種錄) by Hsü Ta-ch'un (徐大椿), constitute the third group. Besides the above, there are still several other works but these are not of much value. On the whole the Ch'ing dynasty did not produce any work of importance on materia medica.

With the advent of the new medicine a different kind of materia medica is produced. The drugs are given a botanical identification and analyses are made of their chemical composition. A modern work translated from the Japanese, entitled *Hsin Pen-Ts'ao Kang Mu* (新本草綱目) or the *New Great Herbal*, is a fair specimen of this new type of writing. Another recent book is the *Chung Kuo Yao Hsüeh Ta Tz'u Tien* (中國藥學大辭典) or *Encyclopaedia of Chinese Materia Medica* compiled by Chen Chuan-jen and published by the World Book Co. in 1935. It consists of two large octavo volumes of over 2,000 pages with a supplement of illustrations in colours. It is a comprehensive, convenient, up-to-date, and useful handbook for reference.

The rich flora of China offers a fertile field for research in botanical investigations. With this object in view many came to this country to search for new plants that might be useful in medicine and they were amply rewarded. Among the valuable contributions made in this field are the works of Bentham, *Flora Hongkongensis* (1861), Porter Smith, *Contributions toward the Materia Medica and Natural History of China* (1871), Bretschneider, *Early European Researches into the Flora of China* (1881) and *History of European Botanical Discoveries in China* (1898), Hemsley, *Index Florae Sinensis* (1905), Stuart, *Chinese Materia Medica* (1911), Read and Liu, *Plantae Medicinales Sinenses*, Read, *Chinese Materia Medica* (1930-1935), Kubota and Okanishi, *Folia Pharmacorum Sinicorum*, and a host of others too numerous to mention.

Let us now turn our attention to a consideration of Chinese drugs which is the most elaborate branch of Chinese medicine. Its medicaments surpass in number those of any other nation. The conviction that in nature there exists a remedy for every ill led to the trial of every imaginable substance of vegetable, animal and, to a less extent, mineral origin. Like Mohammed who says that there is a remedy for every disease, the Chinese believe that everything under the sun has some medicinal virtue. Hence Han Yü (韓愈) the famous essayist remarked: "Cow's urine, horse's excreta, the skin of an old drum are collected and used as remedies". Even though empiricism, busy through centuries, has garnered a mass of useless things as well as some of real therapeutic value, many of these to be properly understood require further trial, and it may be assumed that such investigations would be to the advantage of medicine at large. The number of drugs in the use of which, under similar conditions, Chinese and European medicine are at one is not small. To these belong rhubarb, pomegranate root (for worms), camphor, aconite, cannabis, iron (for anaemia), sulphur (for skin diseases), sulphates of soda and copper (emetic), alum, sal-ammoniac, musk. There are many other substances that have long been employed in China and yet are still unknown, or have but recently been used in other countries.

One of the most remarkable peculiarities of Chinese medical art lies in its richness in remedies of animal origin. Mysticism, albeit a dim groping after those ideas which in later days led to organotherapy, constitutes most probably the guiding motive when, for instance, preparations of liver, lung and kidneys of different animals are prescribed for liver, lung and kidney diseases respectively, or when the semen of young men or nerve tissues of animals are given for conditions of weakness, hens' gizzards for disease of the stomach, animals' testicles for impotence, placenta to assist child-birth. In conjunction with substances of such nature are found—as in the pharmacopoeia of other nations and in European medicine of past centuries—utterly repulsive substances (excreta) (262).

The classification of medicaments to which are ascribed specific relations with certain organs and diseases is most subtly elaborated in accordance with Chinese natural philosophy, a particularly important part being played by speculations on the analogies existing between constitution, colour, taste and specific action of the remedies. Thus green materials and sour tasting drugs are supposed chiefly to influence the liver on account of the wood which is their chief constituent; on the same principle red and bitter materials influence the

heart; yellow and sweet ones the spleen; white and sharp the lungs; black and salt the kidneys.

All warming or cooling materials with a strong action possess the characteristics of the male primitive principle *Yang*, and the slightly tasting, or with pronounced sour, bitter, sweet, spiced or salt flavour, those of *Yin*. The ailments of the upper half of the body where *Yang* predominates, correspond to remedies derived from the upper parts of plants; the diseases of the lower half to those derived from roots, where *Yin* is supposed to predominate. Finally the curative agents are brought into relationship with the seasons of the year, e.g. those working upwards resemble the growing powers of spring, the heavier, more watery, downward-tending agents the failing powers of autumn, etc. In prescribing, following an empiricism centuries old, attention is paid to the time of year, the weather and sex of the patient; sometimes in the choice of drugs symbolism is the determining factor. Thus the red blossoms of the hibiscus are employed as an emmenagogue, saffron, on account of its yellow colour, in jaundice, beans for their shape in kidney trouble, glow-worms as an ingredient of collyria, etc (263).

The above is obviously reminiscent in more than one particular of Paracelsus' Doctrine of Signatures and Galen's Doctrine of Temperatures.

"The nauseating and nonsensical ideas, however, are not all taken from the Chinese Herbal, and much as we may feel disposed to smile at the advice contained in this work, it is well to remember that western literature on medicine of the same period contains very much the same sort of instruction. In Europe as late as the end of the sixteenth century, plants were looked upon from a purely utilitarian point of view, not alone by the masses, but by many professed scholars. Just as men lived in the firm belief that human destinies depended upon the stars, so they clung to the notion that everything upon the earth was created for the sake of mankind. In particular they thought that in every plant there were forces lying dormant which, if liberated, would conduce either to the welfare or injury of man. People imagined they discerned magic in plants, and even believed that they were able to trace in the resemblance certain leaves, flowers, and fruits bore to parts of the human body, an indication emanating from supernatural powers, of the manner in which the organ in question was intended to affect the human constitution. The similarity in shape between a particular foliage-leaf and the liver did duty for a sign that the leaf was capable of successful application in cases of hepatic disease, and the part of a blossom being heart-shaped must mean that it would cure cardiac complaints. Thus arose the so-called Doctrine of Signatures, which, brought to its highest development by the Swiss alchemist, Bombastus Paracelsus (1493-1541 A.D.), played a great part in the sixteenth and seventeenth centuries, and still survives at the present day in the mania for nostrums. In ancient Greece there was a special guild, the Rhizotomoi, whose members collected and prepared such roots and herbs as were considered to be curative, and either sold these themselves or supplied them

(263) The above are free translations from extracts of the *Pen Ts'ao Kang Mu* by Max Neuburger.

to apothecaries for sale. The Medicine Guild in China today performs much the same work, and its origin is long anterior to the Greek Rhizotomoi. If, then, Chinese pharmacology is today several centuries behind that of the Occident, there was a time when it was equally far in front" (264).

As a conclusion to this section on Chinese materia medica the following passages from Shakespeare and Kipling may be quoted:

Scale of dragon, tooth of wolf,
Witches mummy, maw and gulf.
Of the ravin'd salt-sea shark.
Root of hemlock digg'd i' the dark,
Liver of blaspheming Jew,
Gall of goat, and slips of yew
Silver'd in the moon's eclipse.
Nose of Turk, and Tartar's lips,
Finger of birth-strangled babe
Ditch deliver'd by a drab,
Make the gruel thick and slab:
Add thereto a tiger's chaudron,
For the ingredients of our cauldron.

Shakespeare.

Alexanders and Mary gold,
Eyebright, Orris and Elecampane,
Basil, Rocket, Valerian, Rue,
(Almost singing themselves they run)
Vervain, Dittany, Call-me-to-you,
Cowstep, Melilot, Rose of the sun,
Anything green that grew out of the mould,
Was an excellent drug to our fathers of old.

Kipling.

3. MEDICAL JURISPRUDENCE

Attempts to formulate the principles of medical jurisprudence were recorded as early as the Sung dynasty, at a time when Europe boasted of no analogous work. The *Hsi Yuan Lu* (洗冤錄), which has been for hundreds of years the official codex on forensic medicine, is the best compendium on the subject. According to T'ung Lien (童廉) (265), "it dates from the reign of Shun Yu, 1241—1253 A.D. of the later Sung dynasty, and was compiled by a Commissioner of Justice named Sung Tz'u (宋慈) from the *I Yu Chi* (266) by Ho Ning, Duke of Lu under the Chin dynasty, and his son Meng, aide-de-camp to the Heir-apparent under the first Sung dynasty; also from the *Nei Shu Lu* (267) by an unknown author of the Sung dynasty, and from various other books. Being subjected for many generations to practical tests by the officers of the Board of Punishments, it daily became more perfect and more exact."

(264) E. H. Wilson: *China, Mother of Gardens*. Chapter 24, pg. 313, Chinese Materia Medica.

(265) 重刊洗冤錄集證 Preface of *Hsi Yuan Lu Chi Cheng*.

(266) 疑獄集 *I Yu Chi*.

(267) 內恕錄 *Nei Shu Lu*.

"The work now published by the Board was compiled from the *P'ing Yuan Lu* (268) by an unknown author of the Later Sung dynasty, from the *Wu Yuan Lu* (269) by Wang Yu of the Yuan dynasty, and the *Hsi Yuan Lu Chien Shih* (270) by Wang K'en-t'ang of the Ming dynasty, and is strictly adhered to by all engaged in the investigation of criminal cases. Yet although in general use among officials, good editions are rarely to be met with in booksellers' shops. A collection of corroborative cases has lately been supplied by Wang Yu-huai of Wu-lin, an additional commentary by Sub-Prefect Yuan Ch'i-hsin of Kueichi, and coloured punctuation by Prefect Chang Hsi-fan of Yuan-ho, making a thoroughly intelligible and complete work. As, however, the blocks are unfortunately kept in Kuangsi, copies are seldom seen in the South; wherefore, Chung Hsiao-ting, a secretary of the Privy Council, from Chiang-tu, desirous of rendering it widely known, has, after careful revision, brought out a new edition" (271).

The book is divided into five volumes, the first of which deals with inquests, criminal abortion, infanticide, signs of death and human anatomy; the second with murderous assaults, suicides, death by hanging, strangling, drowning and burning; the third and fourth with the signs of poisoning and its antidotes; and the last volume contains miscellaneous instructions for the examination of the dead. Neuburger gives a good summary of its practical value (272):—

"As with everything else in China, forensic medicine is distinguished by a pedantic character, attaching undue importance to accessory details and dazzling by a display of learning whereby really searching investigation is subordinated to scholastic pretence. Accurate and practical thought is intermingled with fantastic speculation—most dangerous upon such a subject. Inquests are obligatory in cases of death from uncertain causes, the coroner's regulations are painfully meticulous, but there are no post-mortem examinations, and the most important findings are sustained upon external inspection or upon such inquiries as are often equivocal or even fantastic. The following are a few examples: Wounds not plainly visible on the body become so by pouring vinegar upon them, or by inspection in sunlight allowed to fall through a piece of silk saturated with oil. Traces of blood removed from a knife come into sight again if it be heated to red heat and has vinegar poured over it. The relationship of two people is proved if a specimen of the blood of each runs together

(268) 平冤錄 *Ping Yuan Lu*.

(269) 無冤錄 *Wu Yuan Lu*.

(270) 洗冤錄箋釋 *Hsi Yuan Lu Chien Shih*.

(271) Translation by Giles in the *Hsi Yuan Lu* or "Instructions to Coroners," London 1924.

(272) Neuburger: *History of Medicine*, pg. 74.

in water; to recognise the skeletons of their parents the children allow their blood to drop upon them; if it soaks into the bone the fact is proof of the relationship. A blow upon the cord by which a man is hanging indicates by the manner of its vibration either suicide or murder. To prove that poisoning has occurred a silver needle (previously passed through an infusion of *mimosa saponaria*) is placed in the mouth of the corpse, which is stopped up with paper; if the needle becomes blue-black and remains so after washing, the poisoning is proved. The same holds good if a hen dies after having been fed on rice kept for twenty-four hours in the mouth of the corpse. Signs that a body found in the water was alive on entering it are held to be: a much distended abdomen, hair pasted down on the head, foam in front of the mouth, stiff hands and feet, white soles, sand under the nails."

It will be seen from the foregoing that in the midst of many excellent and accurate observations, no doubt based on actual experience, there are found a mass of absurd notions and practices. The book forms, however, an interesting record of the theoretical knowledge of medical jurisprudence of that period. The *Hsi Yuan Lu* has been translated into English by Giles (273), into Dutch by de Grijs (274), and partially into French (275).

4. INTERNAL DISEASES

(a) *Leprosy*

The earliest reference to leprosy in Chinese literature was in the Chou dynasty, sixth century B.C. One of Confucius' disciples is said to have died of this disease. This is mentioned in the *Analects*; the passage reads: "Pai Niu is sick. The Master went to see him and, holding his hand through the window, exclaimed: Fate kills him. For such a man to have such a disease! For such a man to have such a disease!" Some doubt whether the complaint referred to above was really leprosy for the description is too indefinite to warrant a conclusion. But from other sources it may be assumed that this was leprosy. It appears that this disease was well known from ancient times. Current writings abound with such descriptions. But it is to medical writings that we must look for more reliable

(273) Giles: *The Hsi Yuan Lu or Instructions to Coroners*, Proceedings of the Royal Society of Medicine, Vol. XVII, pg. 59-107, 1924.

(274) De Grijs: *Verhandelingen van Het Bataviasch Genootschap van Kunsten en Wetenschappen*, Vol. 80, Batavia, 1863.

(275) *Memoires concernant l'histoire, les sciences, les arts, les moeurs, les usages, etc., des Chinois*, pg. 421-440, Paris, 1779.

accounts of the malady. If we are to believe that the *Nei Ching* was written by Huang Ti, then leprosy was known in China over five thousand years ago. In this medical classic four quotations are found which have some bearing on leprosy.

1. Those suffering from 'ta feng' (大風) have stiff joints, the eyebrows and beard fall off.
2. The wind scatters throughout the muscles and comes into conflict with the 'wei chi' (衛氣) or defensive force. The channels being clogged, the flesh becomes nodular and ulcerates. And because of the stagnant movements of this defensive force numbness results.
3. The vital spirits degenerate and turn cloudy causing the bridge of the nose to change colour and rot, and the skin to ulcerate. The wind and chills lodge in the blood vessels and cannot be got rid of. This is called 'li feng' (厲風).
4. For the treatment of 'li feng' prick the swollen parts with a sharp needle, let the foul air out until the swelling subsides.

Next in the order of antiquity is a passage from the *Prescriptions for Emergencies* (肘後方) by Ko Hung (葛洪) which reads: "The first symptom of 'lai ping' (癰病) is numbness of the skin or a sensation as of worms creeping. The eyesight is blurred, and there are dark scaly patches."

In *Chao's Pathology* (巢氏病源) a long account of the etiology and symptoms of leprosy is given. We owe much of our knowledge of the disease to this treatise for most of the diagnostic signs are noted in detail, such as loss of sensation, absence of sweating, dropping out of hair and eyebrows, the perforating ulcers, the distorted ears and fingers, disfigured face, bleared eyes, hoarse and raucous voice, the nasal deformity, etc. Indeed, the descriptions are so comprehensive that they include a variety of other skin diseases which, unfortunately, causes confusion to later writers.

Coming down to the Tang dynasty we find similar accounts given by Sun Szu-mo 孫思邈, the author of the *Thousand Gold Remedies* (千金方). In Volume 23 of this work, under the title of "loathsome sickness of great wind" (惡疾大風), a special chapter is devoted to leprosy. Evidently this disease must have been quite prevalent for Sun stated that he had treated over 600 lepers, the cures being about one in ten. Most of the patients came from the upper class. He laid great stress on hygienic methods and insisted that the treatment must be extended over a long period.

The medical writings of the Sung and Yuan dynasties regarding leprosy differ very little from the above. In the Ming dynasty, however, Li Ting, author of *Introduction to Medicine* (醫學入門), says: "'Lai' and 'li feng' of the *Nei Ching* are the same disease. The causes are first, wind poison; secondly, damp poison; and thirdly, infection. The general cause is internal derangement." The remark that leprosy is infectious is significant.

A standard work of the Ch'ing dynasty is the *Golden Mirror of Medicine* (醫宗金鑑) which is considered one of the medical classics. There leprosy is called by the usual term ta-ma-feng (大麻瘋). It is said that in China sufferers from this complaint are few and that it is found mostly in malarious districts. Its contagious nature appears to be well understood for among the causes enumerated infection by contact with lepers, unclean privies, houses, bedding, etc. are mentioned.

In later works nothing new has been advanced. All are but repetitions or annotations of previous writings. A remarkable fact is that, from the earliest times, leprosy has always been classified as a distinct disease, never being confused with syphilis or tuberculosis.

With regard to treatment, early prolonged medication and great moderation in all things are emphasized. The principle adopted is that it can be sweated out, hence diaphoretics and purgatives are usually prescribed. Sometimes strong poisons such as arsenic, etc. are administered. Scorpions and snakes also play an important part in treatment. In the *Pen T'sao Kang Mu* the white flowery snake (白花蛇) is specially recommended. The following story is given in the *Chao Ya Chien Tsai* (朝野僉載) describing the origin of the cure. A certain man living in the city of Shang Chow suffered from leprosy. The people, loathing him, built a cottage for him on the hills. It happened that a black snake fell into the wine barrel. Not knowing this the leper drank the wine and gradually became better. It was only when the bones of the snake were discovered at the bottom of the cask that the reason of the cure was clear. Other versions of this story are found in many of the clinical notes or medical jottings of various writers.

The earliest mention of the use of Chaulmoogra oil in the treatment of leprosy in China was by Chu Tan-chi of the 14th century. He, however, disapproved of this remedy on account of its ill after-effects. The *Pen T'sao Kang Mu* gives the preparation as follows:

Take 3 catties of the seeds; remove the hulls and grind into fine powder. Discard those that have turned yellow. Pack in an earthen jar and seal up tightly. Put the jar into a pot of boiling water and seal the pot so that no steam can escape. Boil until the oil assumes a black and tarry appearance. It is administered in the following way.

Chaulmoogra oil	1 ounce
Sophora flavescens	3 ounces.

Mix into a paste with wine and make into pills the size of the sterculia seed. Sig: Take 50 pills with hot wine before meals.

(b) Beri-beri

While modern knowledge of beri-beri may be said to date from Bontius in 1758 A.D., yet the disease is distinctly described in Chinese

writings as ancient as 2697 B.C. In the *Nei Ching* there are numerous references to this malady. It is designated by the name "wei pi" (痿痺) and "chueh" (厥)(276). During the Han dynasty it went by the term of "huan feng" (緩風) and "shih pei" (濕痺); during the Chin dynasty "chiao chung" (腳中), and "chiao jao" (腳弱). It was during Liang Chen's time (502-589) that the name "chiao ch'i" (腳氣) was first employed which became the accepted term of beri-beri to the present time. History tells us that it frequently occurred in epidemic form, especially during the Han and T'ang dynasties. It is recorded that in the third year of Ta T'ung (531 A.D.), General Hou Ching (侯景) besieged the city of Tai. There were over 100,000 inhabitants and 20,000 soldiers inside the city. After a prolonged siege, many suffered from swelling of the body with difficult respiration, and nine-tenths died from it. Again, in the first year of Ta Yeh (605 A.D.) Liu Fang (劉方) dispatched a punitive expedition to Lin I and from forty to fifty per cent. of the soldiers succumbed to swollen legs. Evidently these were epidemic dropsies. Most writers observed that it affected people living in the low-lying provinces, particularly those along the coast and south of the Yang-tse Kiang. Hence beri-beri was sometimes spoken of as the "Kiang-nan" disease; Kiang-nan meaning south of the river.

The various theories as to its etiology may be grouped under six headings, namely: moisture and dampness, general debility, wind poison, water poison, errors in diet and malaria miasma. The first-mentioned cause has the largest number of advocates. It is interesting to note that the relationship between spoiled rice and beri-beri was mentioned which agrees with the investigations of Fraser and Staunton.

Its symptoms were quite clearly described by early writers. The following is from Chao's Pathology (610 A.D.):

"Beri-beri is caused by the wind poison. Its onset is insidious. It may come as a primary disease or secondary to some other ailment. In the beginning there are no definite signs. The patient may have numbness, tenderness or creeping sensations in the lower extremities, especially in the toes or along the shins. There may be weakness of the legs, difficulty in walking, slight edema, cold feet, paresis and cramps. The appetite may or may not be affected. Some vomit at the sight of food. When the poison rises to the heart there are pains all over the body, headaches, fever, restlessness, palpitation, precordial distress, colic, diarrhoea, mutterings and coma."

(276) Macgowan thought that the "chueh" of *Nei Ching* was not beri-beri but a sort of syncope. (Customs Med. Report No. 22, 1881). Chinese ancient writers, however, declared that it was the same disease. It must be admitted that the passage on "chueh" referred to is extremely vague but there are other quotations from the *Nei Ching*, especially in the *Ling Shu*, which make it fairly clear that "chueh" resembles beri-beri.

The Chien Chin Fang and the *Wai T'ai Pi Yao* gave similar descriptions. A distinction was also made between the dry and wet form of the complaint.

Special treatises dealing with beri-beri are scarce. The earliest known work was the *Hsin Chuan Chiao Ch'i Lun* (新撰脚氣論) or *New Essay on Beri-beri* by Li Hsuan (李暄) of the T'ang dynasty. This, however, has been long lost. The oldest monograph extant is the *Chiao Ch'i Chih Fa Tsung Yao* (脚氣治法總要) by Tung Chi of the Sung dynasty. The original was also lost but its contents were preserved in the *Great Encyclopaedia of Yung Lo*. These were rearranged and published separately in two volumes about 1078 A.D. Other monographs on beri-beri are as follows:—*Ling Nan Chiao Ch'i Lun* (嶺南脚氣論), 1 vol.; *Chiao Ch'i Lun* (脚氣論) by Su Chien (蘇鑒) and Hsü Yü (徐玉), 1 vol.; *San Chia Chiao Ch'i Fang* (三家脚氣方) by Li, Su and Hsü, 1 vol.; *Chiao Jao Fang* (脚弱方) by Hsü Shu-hsiang (徐叔向), 8 vol.; *Chiao Ch'i Chi* (脚氣集) by Chê Jo-shui (車若水), 2 vol.; *Chiao Ch'i Cho Yen* (脚氣窮言) by Tsêng Ch'ao-jan (曾超然) of the Ch'ing dynasty, 1 vol.

(c) Cholera

The question as to whether cholera existed in China in ancient times is not easily settled. Some authors, Dudgeon(277) and Thomson for instance, are fully convinced that it was present from the remotest antiquity.

"Cholera has been known in China from time immemorial. Over two thousand years before our era it was described by the very name it now bears—Fok Lun—an expression meaning something huddled up in a confused manner inside the body, and which is evidenced by the vomiting and purging. In a supposed work of the yellow Emperor (B.C. 2500) it is said to be due to the development of three pent-up airs, which give rise to vomiting and purging. An author of the T'ang dynasty (A.D. 620—907) attributes it to foods and "not to demons". A writer of the Yuen dynasty (A.D. 1280-1368) ascribes it to retained ingesta, aided by certain external influences, such as cold, by which the male principle (yeung) ceases to ascend and the female (yam) to descend, and the diaphragm is drawn down. Another author, Li Ting, of the Ming dynasty (A.D. 1368—1644) ascribes the disease principally to heat, for the reason that it prevails mostly in summer and autumn. Chinese writers divide cholera into the wet and dry; the latter, with no vomiting and purging, is considered the most fatal"(278).

Other writers like Macgowan(279) and Wong Fun are sceptical about the early occurrence of true Asiatic cholera. Yü Yün-hsiu (余雲岫) one of the foremost living authorities on Chinese medical history, in particular, maintains that it was unheard of in China until after

(277) J. Dudgeon: Customs Medical Reports No. 2, 1872.

(278) J. C. Thomson: *Native Practice and Practitioners*, China Med. Journ. 1890.

(279) Macgowan: Customs Medical Reports, No. 22, 1881.

the first great pandemic of 1817(280). It is true that the term "huo luan" (霍亂), the present name for cholera, is found in the *Nei Ching* and other old chronicles, but it appears that it does not refer to the disease we now recognize as cholera. There is little doubt that in the past this term has been used to cover a group of affections such as acute gastro-intestinal infections, colic, appendicitis, ptomaine poisoning, etc., and cholera might have been mixed up with them. A significant point, however, is that no one, until at a late period, alludes to the epidemic character of the disease. While this seems to prove that true cholera did not exist in ancient times, one cannot, basing on this single fact, declare that it was entirely absent. There are other evidences dating from the Sui and T'ang dynasties which cannot well be dismissed. For example, muscular cramps were expressly mentioned. Ch'ao Yuan-fang (610 A.D.) was the first to describe this symptom and he thought it due to cold air getting into the tendons. Similar descriptions are found in all the writings of the T'ang and Sung periods. Without going deeper into other considerations—which cannot be fully discussed here—one is perhaps justified in saying that cholera was present in this country in the seventh century, though its prevalence and virulence were not so distinguishable as later on.

The modern history of this disease in China is more definite. Some thought that it was brought from India in the seventeenth and eighteenth centuries. According to Cleyer it appeared in China in 1669, coming probably from Malacca. Gentil, in his *Voyage aux Indes Orientales*, states it prevailed in China soon after its appearance in Coromandel in 1769(281). But no such accounts are found in the literature of these times. Most Chinese authorities agree that 1820 was the year when true Asiatic cholera was introduced. It was so different and virulent from the ordinary form that many thought it an entirely new disease. A few descriptions of the epidemic from native sources are given below.

Hsü Tzu-mo 徐子默 of Kashing, in the *Tiao Chiao Sha Fang Lun* 吊脚痧方論, states: "In ancient times there was no such sickness as 'contracting the tendons of the legs disease'. It suddenly appeared between summer and autumn of the *hsin ssu* year (1821). The symptoms are vomiting or purging or both; some with colicky pains and some without. After a little time the tendons of the legs begin to contract. The hands and feet may be similarly affected. The severer the pain, the greater the contractions. Immediately the flesh shrinks, the respiration quickens, the voice is feeble and the eye is sunken. There is intense thirst, cold clammy sweat and sinking pulse. The patient may die within half a day and sometimes even dropped dead while walking along the street."

(280) 新醫與社會，霍亂病沿革說略 時事新報附刊十五年秋

(281) D. B. Simmons: *Cholera Epidemic in Japan*. Customs Medical Reports, September 1879.

Wang Hsun-ch'eng, the author of the *I Lin Kai T'so* writes: "In the 1st year of Tao Kuang (1821) several provinces were infected with the "vomiting, purging and contracting tendon disease". It was so virulent in Peking that a great many died. The poor could not afford burial and the government had to supply coffins for them. In the course of a month one hundred thousand dollars were paid out to defray the cost."

Again Chen Hsiu-yuan of Fukien says: "During the years *keng ch'ê* and *hsin szu* (1820-1821) a large number of people in this province died of this disease (cholera). It appeared first in the 5th month, reaching its height between the 6th and 7th months and gradually declined after the 'white dew' festival."

The second great epidemic reached China about 1837. Wang Meng-ying wrote a treatise on it, in two little volumes, under the title, *Huo Luan Lun* (霍亂論) or *Essay on Cholera*. It was published in 1838. In one of the prefaces by Chu-ko Chih (諸葛之) it is stated that the popular name for the present epidemic was "Tiao Chiao Sha" (吊脚痧). This disease was not mentioned in old writings, hence people regarded it as a strange disease. Wang Meng-ying diagnosed it as being the same as the *huo luan* of ancient times. This outbreak, it is said, was most prevalent in Hangchow. Foreign writers fully described its ravages in Wenchow, Ningpo, Shanghai and other places. Since then cholera makes its appearance in China periodically, causing great havoc in many parts of the country.

(d) Smallpox

An epoch-making contribution of the Sung dynasty was the discovery of inoculation against smallpox. This disease was not found in China in ancient times. The general opinion is that it was introduced from outside about 49 A.D. A passage from the *Ancient History* records that in the 25th year of the reign of Chien Wu, while at war with the barbarians, a large portion of the soldiers including the general, Ma Yuan, succumbed to an epidemic disease. This was thought to be smallpox. The first authentic description of it, however, is found in Ko Hung's *Chou Hou Pei Chi Fang*, as already mentioned. Apparently many epidemics of this nature occurred after this date. Wen Chung-tao gave a record of one about the time of Yung Hwei, 1654 A.D. (282).

But it was in the Sung dynasty that human inoculation of *Variolous virus* was first practised. During the reign of Chen Tsung, 998-1022 A.D. the prime minister Wang Tan, whose sons were suffering severely from smallpox, was informed of the successful preventive inoculation discovered by a philosopher living at O Mei Mountains at Szechuen. A messenger was dispatched to invite this old man to the capital. About a month afterwards he arrived. On

(282) Quoted by *Wai Tai Pi Yao* 外臺秘要 Vol. 3, pg. 8.

seeing the minister's son he patted the child's head and informed the parents that he was a fit subject for inoculation. This was done the very next morning. On the seventh day fever appeared and twelve days later the pustles dried up. Wang Tan was filled with joy. He presented to the old man a rich gift which, however, he declined. Since then the art of inoculation has rapidly been taken up and has become very popular with the people(283). Medical history tells us that the Indians and Persians employed inoculations at an early date. As smallpox was brought into China by the Huns, and as the O Mei mountain is on the border of India, it is highly suggestive that this method came *via* the trade routes from India.

In the *Golden Mirror of Medicine*(284) four forms of inoculation are described: (1) The *Shui Miao* 水苗 consists of plugging the nose with powdered smallpox scabs laid on cotton wool. This is the method recommended:—for a child of a year old, twenty scabs are used, and for older children, thirty. The scabs are put into a clean porcelain mortar and ground into powder with a willow pestle, a few drops of water are added to facilitate the rubbing. In spring, warm water is used; in winter, hot water is necessary. When the scabs are properly powdered, they are put in a piece of cotton wool and rolled up into the shape of a date stone. A piece of string is tied around it with about two inches of the free end dangling outside, and the mass is then gently introduced into the nose. Usually it is allowed to remain in the nose for about six hours. (2) *Han Miao* 旱苗 is a more convenient but less effective method. The powdered scabs are put into the end of a silver tube which is about six or seven inches long and curved at the end. The scabs are blown into the nose. (3) *Tou I* 痘衣. The undergarment of a child with smallpox is taken off and put on a healthy child for two or three days. The result of this method is rather unsatisfactory. (4) *Tou Chiang* 痘漿 is to smear a piece of cotton with the contents contained in the vesicle and to stuff it into the nose. Chinese doctors condemned this as cruel and said that it would affect the child from whom the lymph was taken.

It is remarkable that a century before Jenner's epoch-making discovery the Chinese seem to have had an idea of vaccination, for the use of cow-fleas for the prevention of small-pox is mentioned (285). According to Li Shi-chen there are two kinds of cow-fleas, the black and the white. In medicine, only the white ones are used; these are ground into powder and made into pills with rice flour. It is not at all impossible that the fleas of a cow affected with variola, when taken by the mouth, might have the same effect as vaccination. That this treatment was once popular proves that there must be some efficacy in it. Had there been a Chinese Jenner to follow up this valuable clue the discovery of vaccination might have been made a century earlier and more millions of lives saved.

(283) 痘疹定論 *Treatise on Smallpox and Measles*. Vol. 2, pg. 15.

(284) 醫宗金鑑 *I Tsung Chin Chien*.

(285) 本草綱目 *Pen T'sao Kang Mu*.

(e) *Syphilis*

Syphilis was extremely prevalent in the Ming dynasty. The question of its origin in China has been the theme of extensive discussion. According to Dabry(286) the ancient Chinese were acquainted with this disease, evidence being found in the collection of medical writings made by Huang Ti 2698-2599 B. C. Thomson (287) wrote in a similar vein and added further that Canton was the original focus of infection from whence it spread to the rest of the world. In support of this theory, he cited Tou Han-ch'ing's *Ch'uang Yang Ching Yen Chuan Shu* (瘡瘍經驗全書) as authority. The veracity of these statements has been questioned by the Japanese, especially Okamura (岡川龍彦), who maintains that syphilis was unheard of in China and Japan till the middle of the sixteenth century(288). One writer, Hakuju Hashimoto (橋本伯壽), traces it to 1505 A.D. when he claims it was first introduced into Canton by the Portuguese from India. Later, foreign traders carried it over to Japan by way of Nagasaki(289). Another Japanese work, the *Gekkai-roku*(290), describes an epidemic of syphilis that was prevalent in Japan in 1512 A.D. and called it "T'ang Sore" (唐瘡) and "Liu Chiu" sore (琉球瘡) as this disease was believed to come from these two places, 't'ang referring to China. The *Myoho-ji-ki* also gives a similar description (291).

Most Chinese authorities agree with the statement that syphilis did not exist in China before the Ming dynasty. In the *Supplement to the Medical Miscellany*, Yu Pien writes:—"In the last year of Hung Chih 1505 A.D. the people suffered from foul sores. The disease originated in Canton and as the natives of Kiangsu did not know it they named it "Canton sore." From its resemblance to a strawberry it was also called "strawberry sore." If a weak person takes calomel for treatment it is poisonous to him, resulting in ulcerating nose and feet. It then becomes a chronic disease"(292). Li Shi-chen of the Ming dynasty, author of the *Pen Ts'ao Kang Mu*, says that in ancient times there was no syphilis. It was only between the years 1488-1521 A.D. that this disease was prevalent and people took mercury as a

(286) Dabry: *La Medicine chez les Chinois*, 1863. Quoted in Marshall's 'Syphilology,' pg. 3.

(287) Thomson: *Native Practice and Practitioners*, China Medical Journal 1890, pg. 175.

(288) Okamura: *Monats. für Prakt. Derm.* 1899. Quoted in Lambkin's "*Syphilis: Its Diagnosis and Treatment*." pg. 2.

(289) 橋本伯壽國字斷毒編 *Dandoku-ron*.

(290) 笠田秀慶月海錄 *Gekkai-roku*.

(291) 妙法寺記 *Myoho-ji-ki*.

(292) 俞辨續醫說 Yu Pien: *Supplement to the Medical Miscellany*, Vol. 10.

cure. It started from Kwangtung, spread to the North, and then to all parts of the empire(293). Chen Szu-cheng (陳司成), author of the famous monograph on syphilis, declares that ancient literature never mentioned this disease. It first appeared about 1505 A.D., starting from Kwangtung and spread all over the country(294).

Dabry and Thomson must be mistaken for no such evidence as they claimed is found in the *Nei Ching* to which they referred. Besides, the *Ch'uang Yang Ching Yen Chuan Shu* is a spurious work and cannot be regarded as authoritative. As the Chinese worship the ancients and whenever possible quote the classics, it is singular that no writer has ever described syphilis as being mentioned in ancient literature. It seems that syphilis as understood by these writers meant only the syphilitic eruptions. Apparently they did not know the connection between chancres and syphilides, for the former were mentioned as early as the 7th century A.D. under the names of "tu ching" sore (妬精瘡) and "yin shih" sore (陰蝕瘡). This statement has been disputed by some authorities who declared that these sores were not chancres(295). Nevertheless the passages quoted below appear to prove that they were:—

In the *Essence of Surgery* (296) it is said: "Sores of the private parts may be roughly divided into three kinds: 'shih yin' sore 濕陰瘡 'tu ching' sore 妬精瘡 and 'yin shih' sore 陰蝕瘡. The last is also named chancre. The 'yin shih' sore is due to weakness of the kidneys, sluggishness of the respiration and circulation, and heat accumulating in the genitals. Or it may be due to uncleanness after sexual intercourse. If neglected it will get worse. The sore is very painful; there may be painful micturition like that of gonorrhoea, and the testicles may be inflamed. After ten days the sore is foul with pus and blood, and the flesh is eaten away. There may be continuous bleeding. It then becomes a chancre." This book was written by Chi Te-chih 齊德之 about 1335 A.D.

Chang Tzu-ho in the book, *The Literati's Care of Parents* (297), writes: "If a chancre remains uncured for a long time it is popularly called a 'sao kan' 臊瘡." Again in the *Surgical Methods* (298) appears this quotation: "A 'tu ching' sore or chancre is a sore on the private parts." One commentator(299), on the authority of a single passage in the *Golden Chamber*, is of opinion that the 'tsin yin' sore 浸淫瘡 is syphilis. But this surmise is founded on scanty and uncertain evidence.

A very illuminating description, however, is found in *The Thousand Gold Remedies*(300), a work published in the 7th century. It runs: "A

(293) 李時珍本草綱目 *Pen Ts'ao Kang Mu*, Vol. 18, pg. 49.

(294) 陳司成瘡秘錄 *Mei Ch'uang Pi Lu*.

(295) 花柳病療法 *Treatment of Syphilis*, pg. 1.

(296) 外科精義 *Essence of Surgery*, Vol. 1, pg. 12.

(297) 儒門事親 *The Literati's Care of Parents*, Vol. 4, pg. 8.

(298) 外科心法 *Surgical Methods*. Quoted in *Golden Mirror of Medicine*, section on surgery, Vol. 13, pg. 13.

(299) 金匱要略淺註 *Commentary on the Golden Chamber*, Vol. 8, pg. 22.

(300) 千金要方 *The Thousand Gold Remedies*, Vol. 24, pg. 13 and 14.

'tu ching' sore is a sore on the prepuce just behind the corona in men, and on the labia in women. It is depressed and painful and looks like a chancre. A chancre is not painful." Undoubtedly this is a soft chancre. But the significant point is that the author compares it with a chancre which shows that this disease was known at that time.

As to whether the various sores enumerated above are true chancre or not, the original texts are too brief to enable us to form any definite conclusion. This, however, is immaterial to the question at issue, for two important points have been distinctly brought out, namely, chancres were definitely known to these writers, and most of them lived prior to 1505 A.D., the date set down for the introduction of syphilis into China.

Evidently the ancient physicians did not know the connection between constitutional syphilis and chancre. They confused the former with leprosy, hence the absence of any reference to it. It remained for writers of the Ming dynasty to distinguish syphilis, but thinking it to be a new disease they gave it the name of "yang mei" (楊梅) (301). Later writers fully recognised the relationship of these different symptoms, and in one interesting monograph written in 1631 A.D., the various manifestations and the hereditary transmission of syphilis are mentioned in great detail (302).

The use of mercury in the treatment of syphilis is said to be very old, but when it was first employed is not known. If we regard the "tu ching" sore mentioned above as a true chancre, then the 7th century gives the earliest record of its use, calomel being prescribed for the cure of this disease. Fumigation was the most frequent method of administering mercury in days of yore. After being mixed with black lead, olibanum, myrrh, arsenic, it was wrapped in paper and burnt. As in Europe, mercury has had its ups and downs. At one time it was considered to be indispensable; at another, it was looked upon not only as useless but as being the cause of secondary and tertiary syphilis. It was extensively used in the Ming dynasty but soon fell into utter disrepute on account of its unpleasant effects. Doctors unanimously condemned it and advocated the root of China smilax as an antidote for mercury poisoning as well as a cure for syphilis. And even to this day mercury is hated and detested by the general public as being the cause of unheard-of woes, though doctors generally prescribe it in secret under various disguises.

(301) K. C. Wong in *Notes on Chinese Medicine: Origin of Syphilis in China*, China Medical Journal, July 1918, gives a long list of synonyms for syphilis and its eruptions.

(302) 瘡毒秘錄 *Mei Ch'uang Pi Lu*.

5. OBSTETRICS AND GYNECOLOGY

In order to evaluate properly the endeavours in this direction we must recall the great difficulties encountered. The strict code of moral laws handed down from olden times forbade, as a rule, the attendance of male practitioners upon labouring women(303), this important branch of medicine being left in the hands of ignorant midwives(304). The mortality resulting from such a state of affairs was naturally high. One of the ten Buddhist hells, the "Bloody Lake," was said to be the abode of unfortunate victims of this harsh custom. Beneath its surface all women, who die within a month after parturition, are supposed to be incontinently plunged. Large sums were paid to the priests to free the victims through their prayers. Short of actual release or during the tedious process of accomplishing it, pauses in the torment can be obtained by purchasing the privilege of affixing a few hairs cut from the dead woman's head to the inside of a certain bell set aside for that purpose. Every time the bell is struck during the progress of the temple ceremonies, the women whose hair is attached to it are raised a moment above the lake and allowed to catch a breath of air. . . . As soon as the vibration ceases, they are again plunged below the surface(305).

In spite of these hindrances there exists a not inconsiderable literature upon the subject. Attention was first drawn to this by the pioneer, Dr. Lockhart, who translated in 1842 a Chinese treatise on midwifery(306) reminding one—as Dr. Churchill wrote—of the

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- (303) A. S. Deane e.g. wrote in 1886 (Customs Med. Rep. No. 31, p. 27) that "to the Chinese mind the idea of a man delivering a woman is quite ridiculous" but qualifies this statement by adding "that the women of China are not different from those of other countries, being particularly amenable to any course of treatment that will relieve them of their offspring when nature has proved inadequate to the occasion" and that therefore foreign practitioners are not rarely sent for as a last resort.
- (304) Their calling was as a rule a despised one. Dr. Ram Lal Sircar, for instance, states in a report on the Health of Tengyueh, published in 1908 (Customs Med. Rep., 68th-80th Issues, p. 43) that "the Chinese hate a person who attends on delivery cases. They consider him a very dirty and low person."
- (305) Jamieson, Customs Med. Rep. No. 3 (1872), p. 85.—For other superstitions in regard to Child-Birth, etc. see T. Rennie, *ibidem* No. 38 (1889), p. 11; Queenie Tsay, *Chinese Superstitions rel. to Child-Birth*, China Med. Jl., 1918, p. 533; A. E. Best, *Chinese Folklore Relating to Conception and Maternity*, *ibid.*, 1926, p. 564; K. C. Wong, *Chinese Medical Superstitions*, National Med. Jl., January 1917; Doré: *Researches into Chinese Superstitions*, Vol. 2.
- (306) Dublin Journal of Medical Science, January, 1842.—Extracts of this are quoted in Gordon's *Epitome to the Customs Medical Reports*, London 1884, pp. 316-326.

earliest English authors, like Reynalde, Culpepper, etc. This treatise "drawn up for the benefit of women," claims to make

reference to the powers of nature rather than to prescriptions. All strange and wonderful prescriptions are to be avoided; and further, if we can succeed in preserving the patient without the use of even the simplest remedies, so much the better.

Though naturally not free from erroneous theories, this treatise abounds in sound advice. A proper regime of pregnancy is preached, stress being laid upon the advantage of exercise and the danger of too rich a diet. Repeated warnings are given against precocious interference which is the order of the day in rich families especially, where the women

are so pampered by ease and indulgence that their bodies become weak and feeble. Besides which, rich people are proud, and will not listen to advice; so that when such an event as is now spoken of comes suddenly upon them, there is nothing but clamour and confusion. Midwives also come rushing in one after another; and should anything unpropitious take place, then a number of wonder-working prescriptions and strange remedies are confusedly administered, until, in many cases, both mother and child are lost.

To the woman in parturition it is recommended "to keep up her spirit and to economize her strength, and be resolute." The sound advice is added that

at the time of labour, two or three experienced persons should be in attendance; more are unnecessary; and the whole posse of female relatives are to be respectfully dismissed with kind words, and not permitted to enter the chamber.

While thus laying stress upon the forces of nature, active steps are recommended under certain conditions. Thus, in cases of "transverse or unnatural presentation" it is advised to put the woman to bed and administer some inhalation (hsün 薰) or

a large dose of the decoction called Ch'i wei (seven carminative medicines); then the hands and feet of the foetus are to be taken hold of and properly adjusted, and after a night's rest she will certainly be delivered.

Again,

if the membranes do not come away immediately, take a hempen thread, and having tied it to the navel cord, double the latter so as to make a loop, then tie it again with the thread, and fasten a small weight to it; then separate the child by cutting the cord, and in three or four days the whole will shrink, become dry and pass away. This plan has often been adopted with success; it is only necessary to inform the woman what has been done so that she may be quiet and not alarm herself. The midwives must not be allowed to pull away the membranes; many have lost their lives from this; therefore be very careful.

A comprehensive study of the Chinese literature on Obstetrics and Gynecology was made by Drs. J. Preston Maxwell and Chih Tung-feng of the Peiping Union Medical College(307). They point

out that in the *Nei Ching* some mention is already made of midwifery and women's diseases, the duration of pregnancy and leucorrhoea being among the subjects treated. The first work with a definite section on these two branches of medicine is the *Ch'ao Shih Pin Yuan Hou Lun* (610 A.D.). The earliest monograph on obstetrics is the *Ch'an Pao* by Kao Yin of the T'ang dynasty. The original was lost long ago but there is still preserved in Japan a Sung reprint of it under the title of *Ching Hsiao Ch'an Pao* (經效產寶) (308). It is in 3 volumes and divided into 41 chapters. Each chapter begins with a short discussion followed by suitable prescriptions. Copies of this reprint are still obtainable. There is also a supplement to it called *Ching Hsiao Ch'an Pao Hsu Pieng* (經效產寶續編) in one volume by Chou Ting (周頤). In the medical section of the *Collections of Four Libraries* (四庫全書) mention is made of a book named *Ch'an Pao Chu Fang* (產寶諸方) or *Prescriptions from the Ch'an Pao* by an anonymous writer. Evidently this is a fragment of the original *Ch'an Pao*. It consists of a single volume and is included in the *Great Encyclopaedia of Yung Lo*.

Another old work on obstetrics is the *Ch'an Yü Pao Ch'ing Chi* (產育寶慶集) (309) by Li Shi-sheng of the Sung dynasty (about 1250 A.D.). It was revised by Kuo Chi-chung (郭稽中) who added a series of prescriptions to it. Subsequently, numerous additions were made by various writers, notably by Chao Ying (趙瑩) and Chi Chih-chun (冀致君). Though the name of the book remains the same the contents are greatly changed from the original. The work, as it exists in its present form, is taken from the *Great Encyclopaedia of Yung Lo*. It consists of 2 volumes. The first of these contains 21 essays, 16 comments and 34 prescriptions. The second volume deals with the preparations for pregnancy and puerperium and various matters relating to childbirth.

The first and most important treatise on gynecology is the *Fu Jen Ta Ch'uan Liang Fang* (婦人大全良方) by Chen Tzu-ming of the Sung dynasty. It consists of 24 volumes and is divided into 8 chapters as follows: menstruation, various diseases, conception, prenatal care, hygiene during pregnancy, preparations for delivery, difficult labour and the puerperium. The original was published in 1237 A.D. An abridged edition of the above called *Fu Jen Liang Fang* (婦人良方) was compiled by Hsueh Chi (薛己) of the Ming dynasty and printed in 1566.

(308) 中醫大辭典 *Dictionary of Chinese Medicine*.

(309) Maxwell and Feng state that this is the earliest monograph on obstetrics but they seem to be unaware of the existence of the earlier work, *Ch'an Pao*.

An analysis of the *Ch'an Yu Pao Ch'ing Chi* was given by Preston Maxwell in a second paper (310). While abounding in fanciful theories and strange prescriptions it foreshadows, especially in regard to the management of the birth proper, the advice given in Lockhart's translation.

Considering the general character of the works consulted by him, Preston Maxwell summaries as follows:—

As in the west, a great deal of the subject matter consists of material copied with slight alteration from earlier works.

With practically no exceptions, obstetrics and gynecology are taken up in the same work, though the proportion of space given to each varies, and there is no clear distinction between the sections.

Facts and fancies are mixed up in all the works and a number of them devote space to the question of male and female, and how to secure male births.

The phenomena of menstruation and treatment of irregularities of the menstrual flow, fill a good many pages.

In quite a number of the works the incidence and treatment of the infectious diseases in pregnancy, and the puerperium are discussed. And finally, a great deal of space is taken up by complicated prescriptions dealing with all sorts of diseases and accidents, and to several of these works there have been added appendices on such subjects as rabies.

6. OPHTHALMOLOGY

We are indebted for some able studies on the history of this speciality in China to Dr. H. T. Pi (畢華德) of the Peiping Union Medical College. Having published in 1920 a preliminary article (311), he wrote in 1929 a "Brief Historical Sketch of Native Ophthalmology in China" (312) which provides an interesting resumé of the subject. Here Dr. Pi states that discussions on eye diseases can be found in the *Huang Ti Nei Ching*. The eye was considered as an organ in direct connection with the liver, while the kidney was supposed to be connected with the pupil through which the tears flowed (311).

According to Dr. Pi, the first reliable source on ophthalmology was the *Tzu Wu Ching* (子午經) or "The Importance of Needling," a product of the Han Dynasty 250 B.C. The importance of this as well as of subsequent contributions on this art is surpassed by that of the *Chen Chih Ta Ch'eng* (針灸大成) or "Complete Work on Needling" by Chin Hsien of the late Ch'ing Dynasty

which has become almost the first book of reference on this subject for the native oculists today. Chin Hsien deals on almost all aspects of ophthalmology and also very extensively. The book is well written and richly illustrated with pictures and drawings. Of special interest to modern

(310) Journal of Obstetrics & Gynecology of the British Empire, Vol. 34, No. 3.

(311) *Native Ophthalmic Practice in China*, Nat. Med. J., 1920, p. 188.

(312) *Ibidem*, 1929, p. 604.

students are the many treatments of eye diseases by needling hands, arms, feet, various parts on the back of the body, and almost every spot over the whole region around the eyes. He wanted to needle several places for one and the same disease, and did not hesitate to allow the needle to go as deep as 1 to 3 "fun" (3-9mm). Although he specifically treated only some

twenty kinds of eye diseases, the cases are full of significance.

The earliest book of native ophthalmology was the *Yin Hai Ching Wei* (銀海精微) or "The Exhaustive and Comprehensive Survey of the Silver Sea," the last two words being the name for the eye adopted in the Buddhistic classics(313). In this work from the pen of Sun Szu-mo (孫思邈) of the T'ang dynasty (A.D. 602-907), altogether 81 kinds of eye diseases are described; these "are in reality, however, descriptions of different phases of a much smaller number of diseases some of which are dealt with three or four times in different clinical aspects and stages." Various theories, such as Wu Lun (五輪) or "Five Wheels" and Pa Kou (八廓) or "Eight Outer Boundaries" are thoroughly discussed(314). Numerous prescriptions are given and the methods of needling as well as cauterization for entropion extensively dealt with. Strange that "the very common disease, cataract, is not mentioned at all, or that at least no description in the entire book fits such a disease." That presbyopia is also not among the topics discussed, might be due to the circumstance that this was considered as a physiological change and not a morbid condition.

The *Yen K'e Ta Ch'uan* (眼科大全) or "Most Complete Eye Book" was written at the end of the Ming dynasty, 1628 A.D. As Dr. Pi summarises it is

composed of six volumes, dealing with 106 kinds of eye diseases and their treatment by various methods and prescriptions, the theories or other medical books and thirteen illustrations of the needling methods; some of the names of the places to be needled are different from those mentioned in *Chen Chih Ta Ch'eng*. Almost all native physicians of ophthalmology to-day look to this book for guidance. It is noteworthy to mention the procedure for excision of "Nu Jou" 贅肉 or "protruded flesh" (pterygium or granulation tissue), and the golden needle for removing cataract, which are most probably the only surgical methods which have been used for treating eye diseases up to the present time.

Dr. Pi adds a description of these two methods as well as some illustrations of the needles used and the charms with which the golden instrument for removing cataracts is wrapped before performance of the operation.

Next we come to the *Yen K'e Po Wen* (眼科百問) or "Hundred Questions and Answers of Eye Diseases" written by Wang Shu-pao

(313) A more detailed study of this work by Dr. Pi appeared in the National Med. Jl., 1931, p. 131.

(314) Details on the theories are embodied in Dr. Pi's first contribution (311).

(王寶叔) at the time of Emperor Shun Chih (順治) of the Ch'ing dynasty, 1644 A.D. It actually contains 111 questions and answers about many kinds of eye diseases.

A little later in this dynasty, during the reign of Chia Ch'ing 1796 A.D., Yang Wu (養吾) produced the *Yen K'e Ta Ch'eng* (眼科大成) or "Great Success of Ophthalmology" which was also known as *Yin Hai Chih Nan* (銀海指南) or "Compass of the Silver Sea," comparing the eye with a sea, and the book with a compass for the guidance of the physicians.

In its first volume are given the theories of Wu Lun and Pa K'uo, the influences of the atmospheric phenomena upon the eye, and the seven human moods which have close connection with all the diseases of the eye. The second volume is a description of eye diseases connected with the organs of the body, as the heart, liver, spleen, etc., and the combination of eye diseases with other general diseases such as cough, dysentery, malaria, infectious diseases, etc. Vols 3 and 4 give different prescriptions for treating all kinds of eye diseases (Pi).

In 1821 A.D. there appeared a small book by the name of *Yen K'e Liu Yao* (眼科六要) or "The Six Essences of Ophthalmology," written by Chen Hou-hsi. It contained a brief description of 48 important kinds of eye diseases and a number of prescriptions. The method of clamping the lids with the aid of forceps made of bamboo in cases of trichiasis or entropion is discussed.

In his summary Dr. Pi emphasizes the importance of the *Yin Hai Ching Wei* and *Yen K'e Ta Ch'uan*. The three works appearing later as discussed above are of much less value as their contents represent, in the main, repetitions of other books.

7. PARASITOLOGY

One outstanding feature of the two Parasitology Numbers published by the National Medical Journal in 1931 was an article by Drs. H. J. Chu and I. H. Ch'iang of the Peiping Union Medical College entitled "Extracts from Some Old Chinese Medical Books on Worm Infections" (315). These may best be summarised in the authors' own words:—

- 1.—Paragraphs from eleven volumes of old Chinese Medical Books and from one volume of *Shih Chi Pen Chuan* 史記本傳 (180 B.C.) dealing with helminthic infections have been translated and arranged according to their chronological order. Only those books which were written by noted old Chinese physicians and considered more or less as the standard texts among Chinese medical books have been used.

(315) National Med. Jl., 1931, p. 655.

- 2.—Frequently descriptions of helminthic infections given in different books are quite similar, yet there are certain differences in either the parasites or the symptoms of the diseases.
- 3.—It is quite obvious that old Chinese medicine is speculative and to a high degree written in a philosophical way. The lack of a more detailed description of the worms causes confusion and often makes understanding difficult.
- 4.—Notwithstanding the above mentioned difficulties, an attempt has been made to determine the identity of some of the worms referred to in the translations:—
 - a. The Ts'un Pai Ch'ung (寸白虫) is evidently a tapeworm. The mode of infection (316) and the method of reproduction of this Ts'un Pai Ch'ung resemble closely that of the tapeworm. Furthermore the size, measuring from a few inches to several feet in length, can also be regarded as characteristic.
 - b. The Yu Ch'ung (蚘虫), we are inclined to think, is *Ascaris lumbricoidea*. Its size and the symptoms produced by it all resemble the characteristics of *Ascaris*.
 - c. The Jao Ch'ung (蟯虫) is in all probability *Enterobius (Oxyuris) vermicularis*, judged from the description of the habitat and the symptoms.
 - d. The description of the remaining worms is fragmentary and their determination is difficult. The "Ying Sheng Ch'ung" (應聲虫)—echoing worm as described in *Feng Shih Chin Nang Mi Lu* (馮氏錦囊秘錄)—is no doubt a matter of superstition or simply a legend.
- 5.—It is interesting to note that the theory concerning the origin of these parasitic worms as discussed in *Cheng Chih Chun Sheng* and *Feng Shih Chin Nang Mi Lu*, written in 1604 and 1702 A.D. respectively, is in principle the same as given in *Yi Ching* (易經) which was written about seven hundred years before the beginning of the Christian era.

For a fuller translation of the ideas implied in Chinese terms for various parasitic diseases, reference should be made to the classic *I Tsung Chin Chien* (醫宗金鑑).

There can be no doubt that the old Chinese physicians were acute observers. With the present revival of interest in animal drugs, many new ideas might be evolved out of old methods applied according to new lines of thought. A few examples are herewith given (317):—

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- (316) Dr. R. Hoeppli, in the introduction to the article, says:—"Another point of interest is the belief, similar to the one prevailing for many centuries in European medicine, that worms have their origin in the metamorphosis of various kinds of substances. Here certain old Chinese philosophic speculations become apparent, as for example, the belief that stagnation of food in the intestine causes heat, which condenses with moisture and produces worms. It is very remarkable, however, that several times the Ts'un Pai Ch'ung which, in our opinion, is a tapeworm, is said to be produced by eating raw meat, a belief which is quite evidently not purely speculative, but rather the result of observation."
 - (317) B. E. Read *Treatment of Worm Diseases with Chinese Drugs*, Nat. Med. J., 1931, p. 644.

<i>Name of worms</i>	<i>Medicines mentioned in Chinese History:</i>
1.—Tape Worm 寸白虫病	Plumbum reductum 黑錫灰 Plumbi carbonas 胡粉 Potentilla cryptotaenia Maxim 獐牙 Punica granatum 石榴 Torreya nucifera 榧 Areca catechu 檳榔 Evodia rutaecarpa 吳茱萸 Myliitta lapidescens 雷丸 Hornet's nest 露巢 Artemesia vulgaris 艾葉 Polygonum Aviculare 驚風 Tribulus terrestris 蒺藜子 Gentian root 龍膽 Daphne genkwa 芫花
2.—Ascaris causing stabbing chest pain, with vomiting of clear fluid 蛔虫心痛	Cannabis sativa 麻子 Echinops dahuricus 漏蘆
3.—Heart worms 蛔虫心痛	
4.—Worms in the heart causing pain 心痛有虫	Portulaca cleracea 馬薺莧
5.—Worms in the abdomen 腹中虫病	Melia toosendan 楝
6.—Ascaris infection of the bowel 腹中蛔虫	Prunus mume 烏梅
7. White worms in the bowel 腹中 白虫	
8. Long worms in the bowels 腹中 長虫	
9. Ascaris that come up into the mouth and nose. 蛔虫上行	

8. SURGERY

Chinese surgery is conspicuous by its lack of advancement in spite of the fact that anaesthetics were known at an early date and that Hua T'o the great surgeon flourished as long ago as the Han dynasty. The great reverence for the dead, filial piety, the abhorrence of shedding blood and other such conservative doctrines made it impossible for any correct knowledge of the internal organs without which surgery could not make any progress. On this account even as late as the T'ang dynasty there were no special books dealing with surgery. As in other countries surgeons were, and are still, rated a lower grade than physicians. The surgical armamentarium of the Chinese surgeon consists of rough, badly finished implements, more fitted for a cobbler than a doctor. Under such handicaps it is not to be wondered that Chinese surgery has never risen above the most primitive level. Nevertheless, the ancient history of some of its special features is of interest. The use of *anaesthetics* by Pien Ch'iao and Hua T'o has been dealt with in earlier chapters of this book so that we may now pass on to a discussion of acupuncture and operations.

(a) Acupuncture

Acupuncture is a method peculiar to China for we do not find it mentioned in the medical history of any other nation. The important

position it occupied in ancient times may be gathered from the fact that out of 81 chapters in the *Su Wen*, 15 dealt with this practice. As early as the Tsin dynasty a monograph on this subject appeared and by the time of the T'ang dynasty it was so highly elevated that it constituted one of the four branches of medicine. It may be noted, however, that Wang Tao took exception to this method for in the preface of his great work *The Medical Secrets of an Official* he distinctly stated that it was a dangerous procedure and that the real nature of its working had been lost. He therefore discarded it on these grounds but retained moxa because of its comparative harmlessness. In spite of this, acupuncture continued to flourish and in the Sung dynasty several important monographs were published and the famous bronze model made. Thereafter it generally declined until at the present time it is left chiefly in the hands of ignorant quacks and barber surgeons. Nevertheless, the popular belief in its efficacy for the quick relief of pain, for rheumatism, fainting and convulsions, especially those of infants, retains for it a place in therapeutics.

Acupuncture consists in the introduction of hot or cold needles into the body at certain specific points. In ancient times these needles were made of flint or bone but after the age of iron various kinds of metal—silver, gold, copper, brass or steel—were used. The needles may be either fine, coarse, short or long. The Ling Shu described nine kinds.

The object of the procedure is to puncture the vital points or *Hsüeh Tao* (穴道) as they are technically called and produce the desired results. 365 such points are described in the *Nei Ching* to correspond with the number of days in a year. These, however, vary with different authors. Thus the *Chien Chin Fang* mentions 650, the *Chia I Ching* 654, *I Ching Hsiao Hsueh* 535, the *Shih Szu Ching Fa Hui* 657 and the *I Tsung Ching Chien* 627.

It will be recalled that according to the Chinese idea of splanchnology and angiology the internal organs and the different parts of the body are intimately related and work harmoniously for the maintenance of health. There are twelve *chins* (經) or channels which connect them together. These channels are hypothetical, invisible and undissectable. They do not contain ordinary blood but their supposed contents exert a profound influence on the whole system. This theory corresponds somewhat to the "humoral pathology" of the Greeks which regarded health and disease as the proper adjustment or imbalance respectively of the different components mentioned. When the needle punctures the different tissues at various depths there will be a reaction in the organ to which the tissue is related. This procedure allows harmful gas or other material to escape, removes obstruction caused

by malicious excesses, draws away morbid juices, relieves the stagnation of vital principles, whilst fresh essences are introduced.

Its method of application has been given in minute detail by Yang Chi-chou as follows:

- 1.—Mark the point and press the left thumb nail firmly on the spot selected so as to expel the air and blood.
- 2.—Use the right hand to hold the needle. The mind should be concentrated and the strength sustained.
- 3.—Before puncturing warm the needle by holding it in the mouth.
- 4.—Carefully locate the proper point before inserting the needle so as to avoid piercing the arteries.
- 5.—During the operation if the "air" does not flow freely, gently stroke the surrounding tissues with the fingers.
- 6.—If there is impediment to the needle press along the course of the "channels" with the thumb nail.
- 7.—The needle should be withdrawn very slowly, the patient taking three deep breaths during the process.
- 8.—In puncturing the needle should be twisted or screwed to the required depth.
- 9.—Rotate the needle to the left or right according to the effects desired.
- 10.—The length of time allowed for the needle to remain *in situ* depends on the condition of the patient and the nature of the disease.
- 11.—Before drawing out the needle shake it several times so as to relieve the tension.
- 12.—Press the left thumb over the spot after the needle has been pulled out in order to prevent bleeding as well as air from getting in.

A good description of the actual procedure as witnessed by Dr. W. R. Morse is given below: While walking in the street at Suifu, Szechuen, West China, I was attracted by a large crowd in the market place surrounding a Chinese surgeon (?) who was *executing* the art of surgery by means of needles in the operation of acupuncture. The operator was standing in a small square formed by four benches with no backs, similar to a carpenter's "saw-horse", on these benches sat the patients, and the dense crowd pressed in closely to watch, and listen to him. That man was no mean orator of the patent medicine class and he had a forceful personality.

Suggestively placed on the charts were coins, moxa and an assortment of twelve needles, 3 to 24 cm. in length. I saw needles inserted deeply into the suprasternal notch and in the grooves above the clavicle, which vibrated from their proximity to the great arteries of the neck. Needles were inserted 5 to 15 cm. into the liver and epigastrium. Needles pierced the thigh, forearm, arm, foot, hand, leg, transfixing the knee, elbow, wrist and ankle joints. Another needle passed through the lachrymal sac and proceeded inwards along the inner wall of the orbit, apparently deeply enough to enter the brain. Some of the needles were inserted before I arrived, some I saw inserted. One insertion was rather striking and gruesome. The needle

entered the nose until it reached, I would think from its direction, the ethmoid plate and then was struck a considerable blow, I presume piercing the ethmoid plate into the brain!

One patient with trachoma had a needle inserted for an inch into the upper part of the ear. No place seemed sacred or free from the ubiquitous needle. The operator's procedure for sterilization varied. No application was made to the skin. He "cleaned" the needle with his thumb nail, rubbed it through his hair, or rubbed it off on his gown or the sole of his shoe, or all of these, then lubricated the needle with spittle and drove it home!

After a suitable time he removed the needle, applied moxa, set it on fire, and crushed the ashes into the formed blister with his finger nail. The procedure was complete, until complications arose, which, by the way, are always explained as being due to the disease, not caused by the operation. He traded on human curiosity, credulity, faith, and won—a misguided genius in the face of great need who seized his opportunity with overwhelming optimism and great skill, and moulded the psychology of the crowd to his will. His expertness was remarkable and his patients many. He was dressed in a long gown which had been originally blue, but which had become glistening, smooth, shiny and variegated through varying degrees of accumulated droplets of soup and grease dropped while ingesting his food. There had been many a slip betwixt bowl and lip.

On his feet were cloth-soled shoes which had incorporated in their texture material of the general colour and consistency of mud. This adventitious material was accumulated from passing through the wet streets where dogs, chickens, pigs, ducks and children, equally careful in their toilet, had contributed their quotas. These streets are marked and marred with copious nasal and buccal discharges, as well as being lavishly fertilized by continual droppings from pails of night-soil. His shoes were an entomologist's paradise of uncountable specimens. His finger nails were very long, thick and stained with opium. On the ground before him were spread four large charts. These charts explained something of his supposed theory and were attractive because of their heritage of four thousand years. They very deeply impressed his audience. These charts showed the places which talented ancients had indicated as safe for the needles' entrance (318).

Regarding the bronze model the earliest account of it was in 1027 A.D. Owing to the fact that there were different versions of the *Ming Tang* (明堂圖) or Anatomical Charts and that pictures were not as illuminating as models, Emperor Jen Tsung ordered Wang We-teh, one of the court physicians, to study the subject and to construct a bronze

(318) W. R. Morse: *Chinese Medicine*, pg. 150-157.

image in which all the old theories of anatomy were to be corrected and incorporated. The interior of the figure was fitted with models of the organs and viscera, and these were surrounded with water. On the exterior of the image small holes were drilled to represent the points for needling. Two such figures were made; one was placed in the Imperial Academy of Medicine and the other in the Jen Chi Hall (319). These figures were formerly used for teaching purposes. The model was covered with a coating of yellow wax while the interior was filled with water. The students practised acupuncture on it and they were required to exercise their skill in hitting the holes exactly. When the needle entered the right spot water flowed out but not otherwise (320). This, however, has long since fallen into disuse. Pictorial representations of the bronze figures with surface markings of the vital points, front, back and sideways, are found in most of the books on acupuncture. They are also printed separately in sheets and sold.

It appeared from the following passage that this bronze figure was not of Chinese origin. In 1260 there was a Nepalese by name Arniko, who came to Peking in the train of an Imperial teacher who was returning to the Capital. He was asked by the Emperor what talents he had and replied that he understood something of drawing, engraving and casting metal. The bronze figure *which was sent as a tribute by a foreign prince in the Sung dynasty* and had been out of repair for a long time was shown him. There was no one at court who could renew it. When he was asked if he could undertake the work, he modestly replied that he would try, and he succeeded so admirably that it agreed in every particular with the human figure. The court was satisfied with the workmanship and no one was covetous of his success, of the honour awarded him or of the possession of such ability. This occurred in 1266 (321).

Acupuncture was carried from China to Japan at an early period. Its introduction into Europe was through the efforts of a Dutch surgeon named Ten-Rhyne, who wrote an article which appeared in London in 1683 A.D. Kaempfer in 1712 in the third fascicule of *Amoenitates Exoticae* has a paper on the subject. At one time it excited considerable interest in the West, especially in France. Remusat published a long analysis of the works written at the beginning of the last century for and against this practice. Recently Sir James Cantlie tried it successfully in several cases of rheumatism and sprains

(319) 宋王應麟，玉海卷六十三天聖鹹經

(320) 周密齊東野語

(321) 朱尊彝，日下舊聞卷十中城條。 This was also quoted by Dr. Dudgeon in *The Great Medical College at Peking 1869*, but he omitted that important phrase in italics.

(322) while Morant and Ferreyrolles contributed a review on its history and application(323). Owing to the ignorance of asepsis by native doctors naturally there are considerable risks attending this practice. Hence Dr. J. L. Maxwell called it "the deadly acupuncture needle, which is the favourite Chinese instrument of professional torture". But sometimes miraculous results are witnessed and with proper scientific investigation it might, no doubt, prove a valuable addition to our armamenta. For those who wish to make a study of this subject the following list of books may be useful for reference:—

- 1.—*Chia I Ching* 甲乙經 by Huang Fu-mi of Tsin dynasty.
- 2.—*Ch'ien Chin Fang*, vol. 29. 千金方 by Sun Szu-miao of T'ang dynasty.
- 3.—*Tzu Wu Ching*, 子午經 a spurious work attributed to Pien Ch'iao.
- 4.—*T'ung Jen Chen Chih Ching* 銅人針灸經 by Wang Wei-te, Sung dynasty. Compiled at the order of Emperor Jen Tsung.
- 5.—*Chen Chih Chi Sheng Ching* 針灸資生經 by Wang Shu-chuan of the same dynasty.
- 6.—*Ming Tang Chen Chih T'u* 明堂針灸圖 ascribed to Huang Ti but most probably a compilation of the Sung period.
- 7.—*Ming Tang Chih Ching* 明堂灸經 by Hsi Fang-tzu deals only with moxa.
- 8.—*Pien-Ch'iao Shen-ying Chen-chih Yü-lung Ching* 扁鵲神應針灸玉龍經 by Wang Kuo-tuan of Yüan dynasty.
- 9.—*Chen Chih Wen Tui* 針灸問對 by Wang Chi, Ming dynasty.
- 10.—*Chen Chih Ta Ch'eng* 針灸大成 by Yang Chi-chou, Ming dynasty, a comprehensive monograph on this subject.

(b) Operations

In ancient times there was a doctor named Yu Fu who did not use drugs but employed manipulation, puncturing and cauterization. When necessary he made incisions through the skin, loosened the muscles, identified the blood vessels, sutured the tendons, exposed the brain and spinal cord, cleansed the stomach, intestines and various viscera (324). In the Chou dynasty Pien Ch'iao operated on the heart and stomach. The surgical feats of Hua T'o, the greatest surgeon China has ever produced, have been recorded elsewhere. It appeared that in the Wei dynasty 225 A.D. a Caesarean section was performed upon the wife of a Tartar prince. The patient was pregnant for 12 months when a boy was delivered through a hole under the right axilla and above the pubes. The mother did not suffer much

(322) J. Cantlie: *Needling painful spots as practised by the Chinese*. China Med. Journ. Vol. 30. pg. 410.

(323) Morant and Ferreyrolles: *L'acupuncture en Chine vingt siècles avant J. C. et la réflexothérapie moderne*, L'Homoeopathie Francaise, June 1929.

(324) 史記扁鵲傳 *Historical Records*.

from pain. Eventually the wound closed, both mother and child being well (325).

In the Tsin dynasty there was a surgeon, a pupil of Yin Chung-k'an, who did plastic surgery for harelip. Wei Yang-chi suffered from this defect and went to the doctor. He was operated upon and after one hundred days on a liquid diet and abstinence from laughter he was cured (326). Another surgeon, Fang Kan, who lived in the T'ang dynasty, was so proficient in this that he was designated as "the doctor of lips' repair" (327).

Other instances of operations are on record in which the intestines were sutured and the imperforate anus opened. The *I Hui Pei Pien* describes a case in which a Mrs. Chou fell upon a pointed bamboo and the intestines were ruptured. She was brought to Chiang Tzu-chen who sutured the ends together, put the guts back to the abdominal cavity, applied some salve to the wound and administered a pill. At midnight the patient revived and after a month the wound healed up (328).

Fan Shao-tsan had a son in his old age who later became a famous councillor. The baby when born was without a proper anus. He cried incessantly but the doctors did not know what to do. At last Yeh Yang-sang, father of the celebrated doctor Yeh Tien-shi, arrived on the scene. He diagnosed it as imperforate anus and cut it open with a knife. As the councillor grew up he wrote a biography of Yeh's father to show his gratitude (329).

Our survey would be incomplete without some reference to the operation of castration. The practice has repeatedly been described by foreign observers. An accurate account as given by Wu Lien-teh (330) may with advantage be quoted:—

Mentioned in the annals of Chinese history as early as 1100 B.C., castration was originally adopted as a mode of punishment for certain grave offences. Later on, however, the operation came in vogue as a means of procuring suitable servants for the Imperial palaces and for the eight hereditary princes who alone, besides the members of the emperor's family, had the right to keep eunuchs. The operation of castration was performed in Peking in a special establishment maintained outside one of the palace gates. The applicants were usually

(325) 魏志 *Wei Annals*.

(326) 晉書 *Tsin Annals*.

(327) 尚友錄

(328) 鳳麟粹編

(329) 葉天士傳

(330) Proceedings of the First Pan-Pacific Surgical Conference, Honolulu 1929, p. 480 and Manchurian Plague Prevention Service Reports, Vol. VII (1929-1930), p. 93.

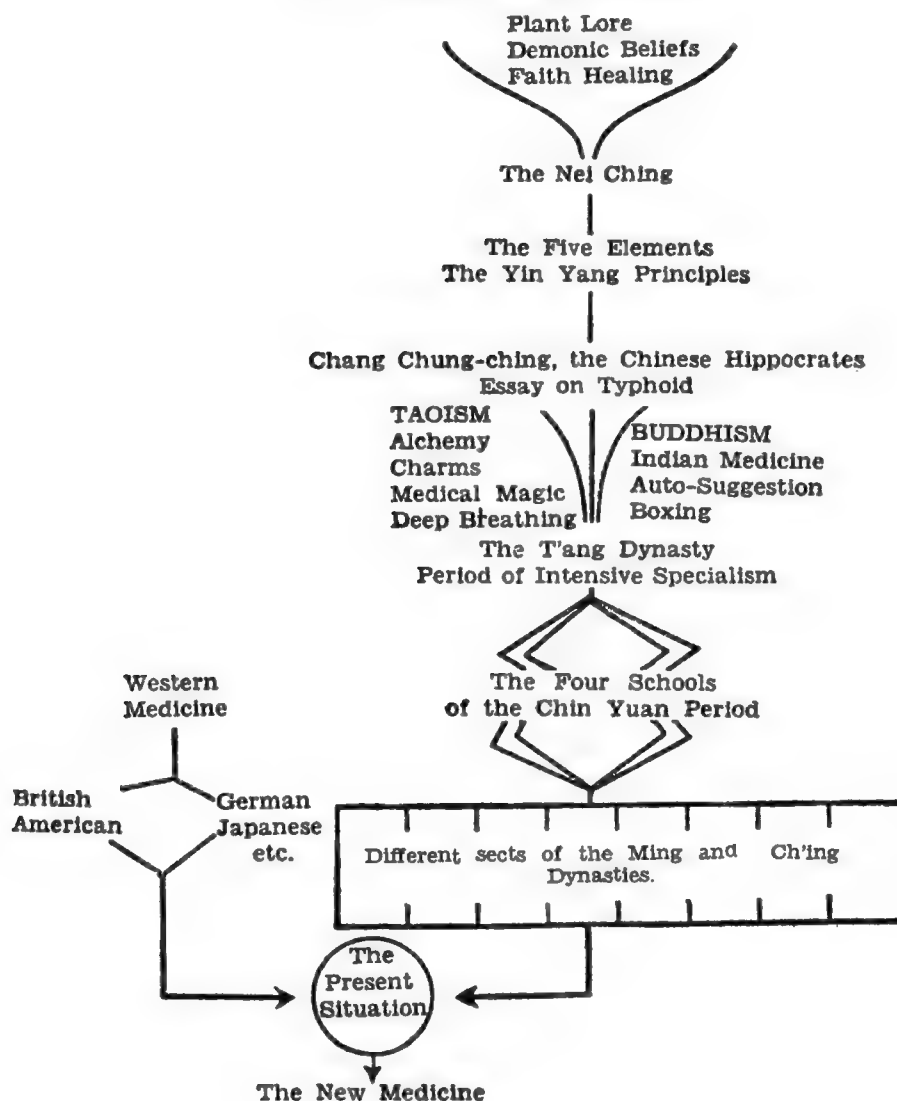
from Hochienfu—a city one hundred miles south of Tientsin. The operators were known as “Knifers” and they contrived to keep the trade in their own families. For one operation including after-treatment they received the equivalent of £1.16.0 or G\$9.00. The technique is thus described:

When about to be operated on, the patient is placed in a semi-supine position on a broad bench. One man squatting behind him grasps his waist, and another is told off to look after each leg. Bandages are fastened tightly round the hypogastric and inguinal regions, the penis and the scrotum are three times bathed in a hot decoction of pepper pods, and the patient, if an adult, is solemnly asked, whether he repents or will ever repent his decision. If he appears doubtful he is unbound and dismissed, but if his courage has held out, as it usually does, all the parts are swiftly swept away by one stroke of a sickle-shaped knife, a pewter-plug is inserted into the urethra, and the wound is covered with paper soaked in cold water and is firmly bandaged. The patient, supported by two men, is then walked about the room for two or three hours, after which he is permitted to lie down. For three days he gets nothing to drink nor is the plug removed from the urethra. At the end of this period the dressings are changed, and the accumulated urine is allowed to escape. The parts generally heal in about one hundred days. . . . About two per cent of all cases prove fatal, some by haemorrhage, some by extravasation, and some doubtless by sepsis. . . . For a long time there is incontinence of urine. . . .

Besides man, the Chinese have always boldly castrated animals. From early times they have discovered the dependence of conception upon the presence of testicles and ovaries, and acting upon this knowledge they have castrated boars and cocks, and spayed sows with the simplest of instruments showing remarkable skill and obtaining unfailing success. To this day such operations may be seen at any village throughout the vast country.

APPENDICES (BOOK ONE)

I.—SCHEME ILLUSTRATING SOME OF THE SOURCES OF CHINESE MEDICINE.



II.—CHRONOLOGICAL TABLE

- B.C. 2953 Dawn of Chinese civilization.
 2838 Shen Nung, founder of Chinese medicine, experiments with herbs and composes the Pen Ts'ao.
 2698 Huang Ti edits the Nei Ching, the oldest medical work known.
 1766 I Yin makes medical decoctions.
 1165 Chou Li published.
 Duties of doctors defined.
 Functions of priest and doctor separated.
 Vital statistics established.
 651 Pien Ch'iao writes the Nan Ching.
 Halls of Healing founded.
 Soporific potion used in surgery described.
 650 Kuan Chung establishes segregated districts for prostitutes.
 213 Emperor Shih Huang decrees burning of all books excepting those on medicine, astrology and agriculture.
 Search for the philosopher's stone and the elixir of life.
 187 First attempt at clinical case taking by Ts'ang Kung.
- A.D. 7 Wang Mang orders court physicians to measure the human viscera.
 49 Smallpox introduced into China.
 67 Buddhism introduced from India.
 126 Chang Tao-ling invents charms and spells for curing diseases.
 to
 145
 168 Chang Chung-ching, the Hippocrates of China, graduated as Master of Arts.
 190 Hua T'o, the famous surgeon, born about this time.
 215 Huang Fu-mi, author of the Chia I Ching, first monograph on acupuncture.
 to
 282
 216 Tsang Kung, one of the Great Trio, probably born about this time.
 217 The Shang Han Lun, a classic on typhoid, printed.
 Prescriptions first written.
 Enemas employed.
 Typhoid epidemic recorded.
 221 System of physical exercises elaborated by Hua T'o.
 to Anaesthetics discovered.
 264 Major operations performed.
 265 Wang Shu-ho publishes the Mo Ching or pulse classic.
 to
 317
 281 Ko Hung writes the Chou Hou Pei Chi Fang which contains the first authentic description of smallpox.
 361
 282 Death of Huang Fu-mi, author of the Chia I Ching.
 319 Ko Hung's Pao P'o Tzu printed.
 443 Medical schools established.
 450 Tao Hung-ching.
 483 Death of Chu Cheng.
 502 Tao Hung-ching's Ming I Pieh Lu published. This is the first official pharmacopoeia of China.
 608 Japan sends Enichi, Fukuin and others to China to study medicine.
 610 Ch'ao Shih Pin Yuan Hou Lun, the first monograph on pathology, printed.
 618 Wang Pin's Commentary on the Su Wen published.
 627 Sun Szu-mo writes the Chien Chin Yao Fang or Thousand Gold Remedies.

- Catheters first employed.
 Use of thyroid gland for goitre discovered.
 Search for the elixir of life most prevalent.
- 629 Medical schools organized in every prefecture.
 656 Shih Su-kung's T'ang Hsin Pen Ts'ao published.
 682 Death of Sun Szu-mo, who is worshipped as the King of Remedies.
 723 Doctors appointed to every prefecture.
 752 The Wai T'ai Pi Yao by Wang T'ao printed.
 Wang T'ao discards acupuncture.
- 761 Wang Ping publishes the Huang Ti Nei Ching or Canon of Medicine.
 973 Kai Pao Pen Ts'ao compiled by order of Emperor Tai Tsu.
 980 Tai Ping Sheng Hui Fang published.
 1057 Medical Compilation Bureau founded.
 1063 Inoculation against smallpox discovered about this time.
 1068 State medical examinations held.
 1076 Imperial Medical College founded.
 1078 Tung Chi's monograph on Beri-beri published.
 1086 Han Chih-ho's Shang Han Wei Chih published.
 1107 The Government orders Chen Shih-wen to revise the Tai P'ing Hui Min Ho Chi Chu Fang or National Dispensatory.
 1111 Sheng Chi Tsung Lu or Imperial Encyclopaedia of Medicine published.
 1116 T'ang Shen Wei writes the Cheng Lei Pen Ts'ao.
 1166 Imperial Medical College abolished.
 1174 Chen Yen propounds the Triple Causes of Illness and their Treatment.
 to
 1189
- 1200 Liu Shou-chen, one of the Four Famous Doctors of Chin Yuan, lived about this time.
 1201 Liu Chi-hsin prints the Chu Shih I Shu.
 1232 Li Kao's Nei Wai Shang Pien Huo Lun published.
 1237 Chen Tzu-ming publishes the Fu Jen Liang Fang, the first monograph on diseases of women.
 Li Tung Yuan Shih Shu published.
 Wang Hao-ku compiles the I Lei Yuan Jung.
- 1251 Death of Li Tung-yuan.
 1263 Chen Tzu-ming writes the Wai K'o Ching Yao.
 1264 Yang Shih-ying edits the Jen Chai Chih Chih.
 1269 Hsu Kuo-chen compiles the Ju Yao Yuen Fang or Imperial Hospital Formulary.
 1276 Li Kao writes the Pei Wei Lun which exerts considerable influence on later medicine.
- 1281 Lo Tien-yi publishes the Wai Sheng Pao Ch'ien or Mirror of Hygiene.
 1308 Wang Yu's Wu Yuan Lu or Medical Jurisprudence printed.
 1317 State Medical examinations re-introduced.
 1322 Tai Yuan-li born
 1323 Wen Jen-kuei's Tou Chen Lun, on smallpox, printed.
 1328 Ch'i Te-chih compiles the Shih I Te Hsiao Fang.
 to
 1337
- 1341 Huo Shou's famous Shih Szu Ching Fa Hui published.
 1347 Chu Chen-heng writes the Ke Chi Yu Lun.
 1358 Death of Chu Chen-heng.
 1378 P'u Chi Fang published.
 1405 Death of Tai Yuan-li.
 1425 Chen Hui writes the Shen Ying Ching.
 1426 The Pu Chi Fang, a most complete collection of prescriptions, by Wang Su published.
 1502 Wang Lun compiles the Ming I Tsa Chu.
 1505 Syphilis appeared in Canton.

- 1515 Yu Po composes the I Hsueh Cheng Chuan.
 1528 Li Lien's Medical History published.
 1531 Wang Chi writes the Wai K'o Li Li or Principles of Surgery.
 1545 Yu Pien publishes the Hsu I Shuo in which China root was mentioned for syphilis.
 Liu Shun's Yu Chi Wei I printed.
 1549 Chiang Kuan compiles the Ming I Lei An.
 1557 Hsu Ch'un Fu's Ku Chin I Tung published.
 1567 Liu Ying composes the I Hsueh Kang Mu
 1569 Tou Meng-lin's Yang Tsang Chuan Shu published.
 Misericordia Hospital founded by Bishop D. Belchior Carneiro in Macao.
 1575 Li T'ing's I Hsueh Ju Men or Introduction to Medicine issued.
 1577 Kuo Tzu-chang writes the Hsi Tou Fang Lun or Treatise on Smallpox.
 1581 Kung Ting-hsien's Wan Ping Hui Ch'un published. Kung Chu-chung's Wai K'o Pai Hsiao published.
 1585 Kuan Shun's Pao Chih Ch'uan Shu published.
 1586 Ma Shih writes Commentary on Nei Ching.
 1592 Fang Yu-chih's Shang Han Lun T'iao Pien printed.
 1594 Wu K'un publishes Commentary on Su Wen.
 1595 Yü Pien writes the Hsu I Shuo which contains some details concerning medical history, literature, biography etc. It describes sarsaparilla and gives the first account of syphilis in China.
 1596 Li Shi-chen's famous Pen Ts'ao Kang Mu or the Great Herbal published.
 1600 Li Tsung-tau born about this time.
 1604 Wang Ken T'ang compiles the Cheng Ch'ih Chun Sheng or System of Medicine.
 1617 Chen Shih-kung's Wai K'o Cheng Tsung published.
 1612 Michael Boym writes Clavis Medica ad Chinarum Doctrinam de Pulsibus.
 to This is the first attempt to bring Chinese medical lore to the
 1659 West.
 1621 Jean Terrentius (Terrenz) publishes a small treatise on human anatomy to in Chinese. This is the earliest attempt to bring Western medical
 1630 knowledge to Chinese scholars.
 1630 Kuan Chuoh Fang Pu or Treatise on Botany published.
 1637 I Tsung Pi Tu by Li Tsung-tau published.
 1642 Wu Yiu-k'e writes the Wen I Lun or Essay on Plague. Mei Ch'uang Pi Lu, monograph on syphilis, published.
 1644 Sacrificial offerings to ancient physicians instituted.
 1648 Yu Chang writes the Shang Han Shang Lun P'ien.
 1654 I Men Fa Lü or Principles of Treatment printed.
 1669 Father Dominique Parrenin translates "L'anatomie de l'homme suivant to la circulation du sang, et les nouvelles decouvertes par Dionis" into
 1741 mandarin.
 1674 Yen K'o Ta Chuen, a treatise on eye diseases, written by Fu Jen-yu.
 1682 Andreas Cleyer publishes Specimen Medicinæ Sinicæ.
 1690 Death of Yu Chang, author of the I Men Fa Lü, at age of 80.
 1692 Fathers Gerbillon and Pereyra cure Emperor K'ang Hsi's fever with cinchona bark.
 1694 Wang Ang's Pen Ts'ao Pi Yao published.
 1695 Chang Shih I Tung printed.
 1698 Chang Lu.
 1705 Huang Yuan-yü born
 1715 Ta Sheng Pien, a household manual on obstetrics, printed.
 1723 Examination of doctors in Chihli province.
 1726 First edition of the Ku Chin T'u Shu Chi Cheng printed.
 1733 Diphtheria epidemic.
 1734 Court physicians ordered to perform sacrificial offerings to ancient physicians.

- 1741 Chang Yen's Chun Tou Hsin Shu published.
1744 Epidemic in Peking.
1747 Chang Yen-sun writes the Chung Tou Hsin Shu, a book on vaccination.
1749 The famous I Tsung Chin Chien or Golden Mirror of Medicine published.
1757 Hsü Ta-chiung's Medical History published.
Chang Tsung-liang writes the Hou K'o Chih Chang.
1764 Lan Tai Kuei Fan published.
1768 Birth of Wang Ching-jen, the "Reformer of Chinese Medicine."
1771 Hsu Ta-chung died, aged 79.
1772 Compilation of the great Collection of Four Libraries begun.
1773 Ku Shih-cheng writes the I Yao Ta Chuan.
1778 Yu Chen's Ku Chin I Yao An published.
1792 T'ang Shih-lieh's Wu I Hui Chiang published.
Bubonic plague in Yunnan.
1799 Four Literary Treasuries published. This monumental collection contains a section on medical literature which is the most complete list of standard works on medicine.
1801 Quinine brought into China from Macao.
1808 Wang Shih-hsiung born.
1858 Ta Sheng Yao Chih printed.
1887 Lu Mao-hsiu, the biographer of Chang Chung-ching, died.

III.—SUMMARY OF CHINESE DYNASTIES

五帝紀 Age of Five Rulers (B.C. 2953-2208)

夏紀 Hsia Dynasty (2207-1766)

商紀 Shang Dynasty (1765-1122)

周紀 Chow Dynasty (1121-249)

—戰國 Warring States (248-222)

秦紀 Ch'in Dynasty (221-207)

漢紀 Han Dynasty (B.C. 206-A.D. 220)

—三國 The Three Kingdoms (A.D.)
221-264)

晉紀 Chin Dynasty (A.D. 265-419)

南北朝 Epoch of Division of North and South (420-589)

隋紀 Sui Dynasty (589-618)

唐紀 T'ang Dynasty (619-907)

五代 Epoch of The Five Dynasties (907-960)

宋紀 Sung Dynasty (960-1279)

—金紀 Chin Dynasty (1115-1233)

元紀 Yüan Dynasty (1206-1368)

明紀 Ming Dynasty (1368-1644)

清紀 Ch'ing Dynasty (1644-1911)

民國 Republic of China (1912-)

IV.—INDEX OF CHINESE BOOKS

- Chao Yeh Chien Tsai 朝野食載
Ch'ao Shih Chu Pin Yuan Hou Tsung
Lun 巢氏諸病源候論
Ch'ao Shih Pin Yuan 巢氏病源
Ch'an K'o Hsin Fa 產科新法
Ch'an Pao 產寶
Ch'an Pao Chu Fang 產寶諸方
Ch'an Yü Pao Ch'ing Chi 產育寶慶集
Chang Chung Ching Fang 張仲景方
Chang Shih I Tung 張氏醫通
Ch'ang An Keh Hua 長安客話
Ch'ang Sha Fang Kê Kuo 長沙方歌括
Ch'ang Sha Yao Chieh 長沙藥解
Che Hung Man Lu 折肱漫錄
Chen Chia Shu Yao 診家樞要
Chen Chu Nang 珍珠囊
Chên Tsung San Mei 診宗三昧
Cheng Chih Chih Nan 證治指南
Cheng Chih Yao Yen 症治要言
Chêng Chih Chun Shêng 證治準繩
Chêng Chih Lei Yüan 證治類元
Chêng Chih Yao Chüeh 證治要訣
Chêng Lei Pen Ts'ao 證類本草
Chi Chiu Ching Yen Fang 急救經驗方
Chi Chiu Hou Sha Yao Fang
急救喉痧要方
Chi Chiu Hsien Fang 急救仙方
Chi Chiu I Sha Ch'i Fang 急救異痧奇方
Chi Shêng Fang 濟生方
Chi Yen Pei Chü Fang 集驗背疽方
Chi Yin Kang Mu 濟陰綱目
Ch'i Ching Pa Mo K'ao 奇經八脈考
Ch'i Tung Yeh Yu 齊東野語
Chia I Ching 甲乙經
Chia Lu Hsin Yü 賈陸新語
Chia Yu Pu Chu Pen Ts'ao
嘉佑補註本草
Chiao Ch'i Chi 腳氣集
Chiao Ch'i Chih Fa Tsung Yao
腳氣治法總要
Chiao Ch'i Lun 腳氣論
Chiao Ch'i Cho Yen 腳氣芻言
Chiao Jao Fang 腳弱方
Chien Hung Chen Sui 剪紅真髓
Ch'ien Chai Chien Hsiao Fang
潛齋簡教方
Ch'ien Chin Fang 千金方
Ch'ien Chin I Fang 千金翼方
Ch'ien Chin Yao Fang 千金要方
Chih I Lu 質疑錄
Chih Tou Hsin Fa 治痘心法
Chih Yüan I Ts'ao Ts'un An
芷園臆草存案
Chin Kuei Hsin Tien 金匱心典
Chin Kuei Hsüan Chieh 金匱懸解
Chin Kuei Kou Yuan 金匱鈞元
Chin Kuei Lun Chu 金匱論註
Chin Kuei Yao Lüeh 金匱要略
Chin Kuei Yao Lüeh Ch'ien Chu
金匱要略淺註
Chin Kuei Yao Liao Shu I 金匱要略述義
Chin Kuei Yao Lüeh Kê Kuo
金匱要略歌括
Chin Kuei Yü Han Yao Liao Chi I
金匱玉函要略輯義
Chin Shu Pen Chuan 晉書本傳
Ching Hsiao Ch'an Pao 經效產寶
Ching Hsiao Ch'an Pao Hsü P'ien
經效產寶續篇
Ching Hsüeh Ts'uan Yao 經穴纂要
Ching I K'ao 經義考
Ching Yao Ch'üan Shu 景岳全書
Ching Yao Fa Hui 景岳發揮
Ching Yao Hsin Fang Pien 景岳新方
Ching Yen Nei Wai Pai Ping Fang
經驗內外百病方
Chin Chi Hsüan Fang 救急還方
Chiu Huang Pen Ts'ao 救荒本草
Chiu Mî Liang Fang 救迷良方
Cho K'eng Lu 輟耕錄
Chou Hou Pei Chi Fang 肘後備急方
Chou Li 周禮
Chou Shu Ta Wu Chieh 周書大武解
Chow I 周易
Chu Fang Fa Hui 局方發揮
Chu Tui Chi 主對集
Ch'u Shih I Shu 褚氏遺書
Ch'ü Li 曲禮
Ch'uan Hsin Shih Yung Fang
傳信適用方

- Ch'uan Ya 串雅
Ch'uan Shêng Chih Mi 全生指迷
Chuang Yang Ching Yen Ch'uan Shu 瘡瘍經驗全書
Chun Tou Hsin Shu 種痘新書
Ch'un Wen San Tzu Ch'ueh 春溫三字訣
Chung Hsi Hui T'ung I Ching Ching I 中西會通醫經精義
Chung Kuo I Hsueh Ta Tz'u Tien 中國醫學大辭典
Chung Kuo Yao Hsueh Ta Tz'u Tien 中國藥學大辭典
Chung Tsang Ching 中藏經
Ch'ung Ch'ing T'ang Sui Pi 重慶堂隨筆
Ch'ung Ting Chen Chia Chih Ch'ueh 重訂診家直訣
Ch'ung Ting Fu Jen Kuei 重定婦人規
Fu Jen Liang Fang 婦人良方
Fu Jen Ta Ch'uan Liang Fang 婦人大全良方
Fu Kê Chun Sheng 婦科準繩
Fu Kê Tsa Cheng 婦科雜症
Fu Yu Pieng 婦幼篇
Hai Wai Yen Fang 海外驗方
Han Shih I T'ung 韓氏醫通
Han Shih Wai Chuan 韓詩外傳
Han Wu Wai Chuan 漢武外傳
Hê Kuan Tzu 韓冠子
Ho Chi Ch'ü Fang 和劑局方
Hou Han Shu Fang Shu Chuan 後漢書方術傳
Hou K'o Chih Chang 喉科指掌
Hou Sha Cheng Ti 喉痧正的
Hsi Yüan Lu 洗冤錄
Hsi Yüan Lu Chien Shih 洗冤錄箋釋
Hsiao Er Chih Ch'ueh 小兒至訣
Hsiao Er Fang Lun 小兒方論
Hsiao Er I Fang Miao Hsüan 小兒醫方妙選
Hsiao Er Ling Pi Fang 小兒靈秘方
Hsiao Er Pan Chen Lun 小兒鑑審論
Hsiao Er Pin Fang 小兒病方
Hsiao Er Wei Shêng Tsung Wei Lun 小兒衛生總微論方
Hsiao Er Yao Chêng Chih Chueh 小兒藥證直訣
Hsieh Cheng Lun 血證論
Hsin Chuan Chiao Ch'i Lun 新撰關氣論
Hsin Fang Pa Chên 新方八陣
Hsin Pen Ts'ao Kang Mu 新本草綱目
Hsing Se Wai Chen Chien Mo 形色外診簡摩
Hsü I Shuo 續醫說
Hsü Lao Chin Ching Lu 虛勞金鏡錄
Hsü Shih I Pien 徐氏醫略
Hsüan Ming Lun 宣明論
Hsüeh Ku Chen Tse 學古診則
Huai Nan Tzu 淮南子
Huang Ti Nei Ching 黃帝內經
Huang Ti Chi Pai An Mo 黃帝岐伯按摩
Huang Su Fang 黃素方
Hui Hsi I An 洞溪醫案
Hui Hsi Tao Ch'ing 洞溪道情
Huo Luan Lun 霍亂論
I An Ch'u Pien 醫案初編
I An Hsü Pien 醫案續編
I An Lei Lu 醫案類錄
I An San Pien 醫案三編
I Chi K'ao 醫籍考
I Chia Hsin Fa 醫家心法
I Ching 易經
I Ching Ching 易筋經
I Fang Chi Chieh 醫方集解
I Fang Ching Yao 醫方精要
I Hsueh Chen Ch'uan 醫學真傳
I Hsueh Ch'i Yuan 醫學啓元
I Hsueh Chu Yu Shih San K'o 醫學親由十三科
I Hsueh Fa Ming 醫學發明
I Hsueh Ju Men 醫學入門
I Hsueh Kang Mu 醫學綱目
I Hsueh San Tzu Ching 醫學三字經
I Hsueh Shih Tsai I 醫學實在易
I Hsueh Ts'ung Chun Lu 醫學從衆錄
I Hsueh Yüan Liu Lun 醫學源流論
I I Ping Shu 醫醫病書
I Kuan Pien 醫貫
I Lei Yüan Jung 醫壘元戎
I Liao Ch'ao 醫略抄
I Lin Kai T'ao 醫林改錯
I Men Pang Hê 醫門棒喝
I Men Fa Lu 醫門法律
I Shang Han Lun 傷寒論
I Sheng 醫勝
I Shih I An 易氏醫案

- I Hsin Fang 醫心方
 I Shuo 醫說
 I Tsung Chin Chien 醫宗金鑑
 I Yü Chi 疑獄集
 I Yüan 異苑
 Jih Hua Chu Chia Pen Ts'ao 日華諸家本草
 Jih Yung Pen Ts'ao 日用本草
 Ju Men Shih Chên 樞門事親
 Jui Chu T'ang Ching Yen Fang 瑞竹堂經驗方
 Kai Pao Pen Ts'ao 開寶本草
 Kai Yao Lun Su 痿痺論疏
 Ke Chih I Li 格致醫理
 Kê Chih Yu Lun 格致餘論
 Kêng Hsin Yü T'se 庚辛玉冊
 Kia Chien Ling Mi Shih Pa Fang 加減靈秘十八方
 Ku Chin I An Hsüan 古今醫案選
 Ku Chin I Tung 古今醫統
 Ku Chin Tu Shu Chi Cheng 古今圖書集成
 Ku Fang Pa Chen 古方八陣
 Kuan Tzu 管子
 Kuei I Fang 鬼遺方
 Kuei Yen Lu 歸硯錄
 K'ung Tzu Chia Yü 孔子家語
 Kuo Yü 國語
 Lan Hou Tan Sha Chi Yao 爛喉丹痧輯要
 Lan Shih Pi Ts'ang 蘭室秘藏
 Lan T'ai Kuei Fan 蘭臺軌範
 Lei Chêng P'u Chi Pen Shih Fang 類證普濟本事方
 Lei Chêng Yung Yao 類證用藥
 Lei Ching 類經
 Lei Fang Hsüan Tshn 類方選傳
 Lei Kung P'ao Chih Lun 雷公炮炙論
 Lei Kung Yao Tui 雷公藥對
 Li Cheng San Tzu Chüeh 痢症三字訣
 Li Chi 禮記
 Li Lien I Shih 李滌醫史
 Li Shih Yao Lu 李氏藥錄
 Li Tai Ming I Hsüan An 歷代名醫選案
 Li Yun 運禮
 Lieh Hsien Chuan 列仙傳
 Lieh Nü Chuan 列女傳
 Lieh Tzu 列子
 Lin Chêng Chih Nan 臨證指南
 Ling Nan Chiao Ch'i Lun 嶺南腳氣論
 Ling Shu 靈樞
 Ling Shu Hsüan Chieh 靈樞懸解
 Ling Su Chieh Yao Ch'ien Chu 靈素節要淺註
 Ling Su Lei Ts'uan 靈素類纂
 Liu Chow I Hua 柳洲醫話
 Lu Hsing Ching 顏頤經
 Lu Shih 路史
 Lü Lan 呂覽
 Lû Shan T'ang Lei Pien 侶山堂類辨
 Lû Shê Pei Yao Fang 旅舍備要方
 Lun Mo Chih Nan 論脈指南
 Lun Yü 論語
 Mei Ch'uang Pi Lu 徽瘡秘錄
 Ming I Pieh Lu 名醫別錄
 Ming Li Lun 明理論
 Mo Ching 脈經
 Mo Chueh 脈訣
 Mo Tzu 墨子
 Mo Chüeh Ch'i Wu 脈訣啓悟
 Mo Chüeh K'an Wu Chih Chieh 脈訣刊誤集解
 Mo Hsüeh Chi Yao 脈學輯要
 Mo Hsüeh Ching Wei 脈學精微
 Mo Hsüeh Szu Chung 脈學四種
 Mo Lun 脈論
 Mo Yin Cheng Chih 脈因證治
 Nan Ching 難經
 Nan Ching Ching Shih 難經釋義
 Nan Ching Hsüan Chieh 難經懸解
 Nan Ching Pen I 難經本義
 Nan Ching Pien 難經辨
 Nan Ching Su Cheng 難經疏證
 Nei Chao Fa 內照法
 Nei Chao Tu 內照圖
 Nei Ching 內經
 Nei Ching Hsüan Yao 內經選要
 Nei Ching P'ing Wen 內經評文
 Nei Ching Yao Liao 內經要略
 Nei Kê Hsin Fa 內科新法
 Nei Shu Lu 內恕錄
 Nei Wai Shang Pien Huo Lun 內外傷辨惑論
 Nü Kê Chi Yao 女科輯要
 Nü Kê I An 女科醫案

- Nü K'o Yao Chih 女科要旨
 Pa Tuan Chin 八段錦
 Pai Hou Chi Fa Chüeh Wei 白喉治法抉微
 Pai I Fang 百一方
 Pan Chen Fang Lun 斑疹方論
 Pao P'o Tzu 抱朴子
 Pao Ying Yao Chih 保嬰要旨
 Pen Ching Feng Yuan 本經逢源
 Pen Ts'ao 本草
 Pen Ts'ao Ao I 本草奧義
 Pen Ts'ao Ching 本草經
 Pen Ts'ao Ching Pai Chung Lu Chu Chieh 本草經百種錄註解
 Pen Ts'ao Ching Su 本草經疏
 Pen Ts'ao Ch'ung Yuan 本草崇原
 Pen Ts'ao Fa Hui 本草發揮
 Pen Ts'ao Hui Pieng 本草會編
 Pen Ts'ao Kang Mu 本草綱目
 Pen Ts'ao Kang Mu Shih I 本草綱目拾遺
 Pen Ts'ao Kê Kuo 本草歌括
 Pen Ts'ao Meng Chuan 本草蒙筌
 Pen Ts'ao Pi Yao 本草備要
 Pen Ts'ao Pieh Shuo 本草別說
 Pen Ts'ao Pien Tu 本草便讀
 Pen Ts'ao Tse Fang 本草摘方
 Pen Ts'ao Ts'ung Hsin 本草從新
 Pen Ts'ao Wen Ta 本草問答
 Pen Ts'ao Yen I 本草衍義
 Pen Ts'ao Yen I Pu I 本草衍義補遺
 Pi Hua I Ching 筆花醫鏡
 Pi Wei Lun 脾胃論
 P'i Fu Hsin Lun 皮膚新論
 Pien Ch'ian Hsin Shu 扁鵲心書
 Pien Lei 辨類
 Pien Hu Mo Hsüeh 瀕湖脈學
 Pin Yuan Hou Lun 病源候論
 Ping Chi Ch'i I Pao Ming Chi 病機氣宜保命集
 Ping Yuan Lu 平寬錄
 P'ing Pien Mo Fa Kê Chüeh 平辨脈法歌訣
 San Huang Pen Chi 三皇本紀
 San Hsiao Lun 三消論
 San Yin Chi I Fang 三因極一方
 San Chia Chiao Ch'i Fang 三家脚氣方
 Shan Hai Ching 山海經
 Shang Han Cha Ping Lun 傷寒雜病論
 Shang Han Chen Fang Kê Kuo 傷寒真方歌括
 Shang Han Chen Kê Fang 傷寒真格方
 Shang Han Chien Cheng Hsi I 傷寒兼證析義
 Shang Han Chih Wei 傷寒指微
 Shang Han Chin Ching Lu 傷寒金鏡錄
 Shang Han Chun Sheng 傷寒準繩
 Shang Han Hou Tiao Pien 傷寒後條辨
 Shang Han Hsü Lun 傷寒續論
 Shang Han Hsüan Chieh 傷寒懸解
 Shang Han I Chueh Ch'uan Chieh 傷寒醫訣串解
 Shang Han Ko 傷寒歌
 Shang Han Lai Su Chi 傷寒來蘇集
 Shang Han Lei Fang 傷寒類方
 Shang Han Lun 傷寒論
 Shang Han Lun Chi I 傷寒論輯義
 Shang Han Lun Chu Lun I 傷寒論著論翼
 Shang Han Lun Ch'ien Chu 傷寒論淺註
 Shang Han Lun Kuang I 傷寒論廣義
 Shang Han Lun Shu I 傷寒論述義
 Shang Han Lun Tiao Pien 傷寒論條辨
 Shang Han Pu Cheng 傷寒補正
 Shang Han Pu Li 傷寒補例
 Shang Han Shê Chien 傷寒舌鑑
 Shang Han Shou I 傷寒說意
 Shang Han Tien Yao 傷寒典要
 Shang Han Tsuan Hsü Lun 傷寒續緒論
 Shang Han Tsung Ping Lun 傷寒總病論
 Shang Han Wei Chih 傷寒微旨
 Shang Han Yao Pien 傷寒約編
 Shang Lun P'ien 尚論篇
 Shang Yang Fu Chih 襄陽府志
 She Chien Tu 舌鑑圖
 Shen Chi Cho Yen 慎疾芻言
 Shen Chi Tsung Lu 聖濟總錄
 Shen Chien 申鑒
 Shen Hui Fang 聖惠方
 Shen Jou Wu Shu 傷寒五書
 Shen Nung Pen Ts'ao Ching 神農本草經

Shi Fang Kê Kuo 時方歌括
 Shi Fang Miao Yung 時方妙用
 Shih Chi 史記
 Shih Chi Kang Chien 史記綱鑑
 Shih Chien Pen Ts'ao 食療本草
 Shih Ching 詩經
 Shih Wu Pen Ts'ao 食物本草
 Shih Yao Shen Shu Chu Chieh
 十藥神書註解

Shih Pen 世本
 Shih Pu Chai I Shu 世補齋醫書
 Shih Shih Pi Lu 石室秘錄
 Shih Tsai Chih Fang 史載之方
 Shih Wu Mi Shu 增補食物祕書
 Shih Yao Shen Shu 十藥神書
 Shou Chin Yang Lao Hsin Shu
 壽親養老新書

Shou Shen Chi 搜神記
 Shou Shih Pao Yüan 壽世寶元
 Shu Chiao 書蕉
 Shu Ching 書經
 Shu I Chi 述異記
 Shu Pen Ts'ao 蜀本草
 Shuo Wen 說文
 Shuo Yuan 說苑
 Su Shen Liang Fang 蘇沈良方
 Su Ling Wei Yun 素靈微蘊
 Su Wen 素問
 Su Wen Chao Hsu 素問抄序
 Su Wen Hsuan Chieh 素問懸解
 Su Wen Hsü Chi Yüan Ping Shih
 素問玄機原病式

Su Wen Ping Chi 素問病機
 Su Wen Shih 素問式
 Su Wen Yao Chêng 素問藥證
 Sung Shih 宋史
 Szu Kê Chien Hsiao Fang 四科簡效方
 Szu Ku Ch'üan Shu 四庫全書
 Szu K'u T'i Yao 四庫提要
 Szu Shen Hsin Yuan 四聖心源
 Szu Shen Hsuan Shu 四聖懸壺

Ta Kuan Pen Ts'ao 大觀本草
 Ta Shêng P'ien 達生編
 Ta Shêng Yao Chih 大生要旨
 T'ai I Chu Chêng Wen 太醫局程文
 T'ai I Shen Chen 太乙神鍼
 T'ai Ping Shen Hui Fang

太平聖惠方

T'ai Su 太素
 T'ang Pen Ts'ao 唐本草
 T'ang T'ou Kê Chüeh 湯頭歌訣
 T'ang Yeh Pen Ts'ao 湯液本草
 Tao Tê Ching 道德經
 Tao Te Ching Hsiao Shih 道德經詳釋
 Ti Huang Shih Chi 帝皇世紀
 Tiao Chiao Sha Fang Lun 吊脚痧方論
 Tou Chên Chin Ching Lu 痘疹金鏡錄
 Tou Chên Hsin Ch'uan 痘疹心傳
 Tsa Ping Cheng Chih 雜病症治
 Ts'ai Yao Lu 采藥錄
 Tsang Fu T'u Shuo 藏腑圖說
 Tsang Fu Yao Shih 藏府藥式
 Tso Ch'uan 左傳
 Ts'uang Yang Ching Yen Ch'üan Shu

瘡瘍經驗全書

Tu I Su Pi 類醫彙編
 Tu Shu Chi 讀書記
 T'u Chu Mo Chueh 圖註脈訣
 T'u Ching Pen Ts'ao 圖經本草
 T'ui Ch'ü Szu I 推求師意
 Tung Hsi Hui Lu 東西彙錄
 Tung T'ien Ao Chih 洞天奧旨
 T'ung Chien Wai Chi 通鑑外紀
 T'ung Jen Chen Chih Ching 銅人針灸經

Wai Chi 外紀
 Wai Kê Cheng Chih Ch'uan Sheng Chi
 外科證治全生集
 Wai Kê Cheng Tsung 外科正宗
 Wai Kê Hsin Fa Liang Fang
 外科心法良方

Wai Kê Pieh Chuan 外科別傳
 Wai T'ai Pi Yao 外臺秘要
 Wan Ping Hui Ch'un 萬病回春
 Wei Chi Pao Shu 衛濟寶書
 Wei Shêng Hung Pao 衛生鴻寶
 Wei Shêng Shih Ch'üan Fang
 衛生十全方

Wen I Lun 溫疫論
 Wen I Ming Pien 瘟疫明辨
 Wen I T'iao Pien 溫疫條辨
 Wen Je Ching Wei 溫熱經緯
 Wen Je Chui Yen 溫熱贅言
 Wen Ping T'iao Pien 溫病條辨
 Wen Je Lun 溫熱論
 Wu Chin Hsien Chih 武陵縣志

- Wu Shih I An 吳氏醫案
 Wu Shih Pen Ts'ao 吳氏本草
 Wu Yüan Lu 無寬錄
 Yang I Chun Sheng 楊登準編
 Yang I Ta Ch'üan 楊登大全
 Yang Lao Feng Chin Shu 養老奉親書
 Yang Sheng Ching 養生鏡
 Yang Shêng Pi Yung 養生必用
 Yao Chi Lun 瘧疾論
 Yao Chih T'ung I 藥治通義
 Yao Fu Ch'uan Sheng 樂府傳聲
 Yao Hsing Tsung I 藥性總義
 Yeh An Ts'un Chen 葉案存真
 Yen Hou Mo Fa T'ung Lun 咽喉脈法通論
 Yen Hsüeh Ch'uan Shu 眼學全書
 Yen I Hsüan P'ing 音醫選評
 Yen Kê Chieh Ching 眼科捷徑
 Yen K'o Ta Ch'üan 眼科大全
 Yin Chi Ts'ao 印機草
 Yin Hai Ching Wei 銀海精微
 Yin Tou Liao 引痘略
 Ying Er Pi Fang 嬰兒秘方
 Ying Er Pao Ching 嬰兒寶鏡
 Ying Hai Lun 嬰孩論
 Yu Kê Chun Sheng 幼科準繩
 Yu Kê T'zu Fa 幼科慈筏
 Yu Kê Yao Liao 幼科要略
 Yu K'o T'ieh Ching 幼科鐵鏡
 Yü Ming Tsung Yin 育明宗印
 Yü Tsuan I Tsung Chin Chien 御纂醫宗金鑑
 Yüan Chi Ch'i Wei 元機啓微
 Yüan Ho Chi Yung Ching 元和紀用經
 Yüan Shih 元史
 Yüan T'i I Hua 願體醫話
 Yüan Tien Chang 元典章
 Yün Ch'i Pien Lan Chu 運氣便覽註
 Yun Ch'i Yao Chih Lun 運氣要旨論
 Yung Yao Fa Hsiang 用藥法象

V.—BIBLIOGRAPHY

The following is a selected list of books and articles relating to ancient and modern medicine in China with special reference to its history and customs.

A. BOOKS, REPORTS AND PERIODICALS

- | | |
|----------------------|---|
| Balme, H. | China and Modern Medicine.
United Council for Mission. Educ. London, 1921. |
| Boym, M. | Clavis medica ad Chinarum doctrinam de pulsibus.
Frankfurt, 1680, 4to. |
| Breitenstein, H. | Die gerichtliche Medicin bei den Chinesen. Wien. Med.
W. Schrift, 1898. |
| Braun, | List of Medicines Exported from Hankow and other Yang-
tse Ports. Chinese Maritime Customs, Shanghai. |
| Bretschneider, E. V. | On the Study and Value of Chinese Botanical Works.
Foochow, 1870.
Early European Researches into the Flora of China,
Shanghai, 1881.
Botanicum Sinicum.
London, 1882.
History of European Botanical Discoveries in China.
London 1898. |
| Cadbury, W. W. | At the Point of the Lancet. One Hundred Years of
the Canton Hospital 1835-1935. Kelly & Walsh,
Hongkong, 1935. |
| Cleyer, A. | Specimen medicinae sinicae.
Frankfurt; 1682, 4to. This also contains the treatise
by Boym. |
| Cousland, P.B. | An English Chinese Lexicon of Medical Terms.
Medical Missionary Association, Shanghai, 1908. |
| Dabry, P. | La médecine chez les Chinois.
Paris, 1863, 8vo. |
| Debeaux, O. | Essai sur la pharmacie et la matière médicale en Chine.
Paris, 1865. |
| Dudgeon, J. | The Diseases of China.
Dunn and Wright. Glasgow, 1877. |
| Gauthier, G. | Deux années de pratique médicale à Canton.
Paris, 1863, 8 vo. |
| Giles, H.A. | The "Hsi Yuan Lu" or Instructions to Coroners.
John Bale, Sons & Danielsson, London, 1924 |
| Grenoble, | Secret de la médecine des Chinois.
1671, 12 mo. |
| Hanbury, D. | Notes on Chinese Materia Medica.
London, 1862. German by Martens Speyer, 1863. |
| Hobson, B. | Medical Vocabulary in English and Chinese.
Shanghai, 1858, 8 vo. |
| Hoh, G. | Physical Education in China.
Commercial Press, Shanghai 1926. |

- Hooper, D. On Chinese Medicine: Drugs of Chinese Pharmacies in Malaya. The Gardens' Bulletin, Vol. VI, Part I. 1929.
For sale at the Botanic Gardens, Singapore.
- Hübotter, F. Die Chinesische Medizin. Leipzig, 1929.
Chinesische Pharmacologie. Berlin, 1913.
- Hübotta, F. A Guide through the Labyrinth of Chinese Medical Writings. Kumamoto, Japan 1924.
- Jefferys & Maxwell, Diseases of China.
Blakiston Son & Co., Philadelphia, 1910. 2nd Edition published in China, 1929.
- Johnson, O.S. A Study of Chinese Alchemy.
Commercial Press, Shanghai, 1928.
- Lariviere, A. Etude sur la medicine Chinoise.
Bordeaux, 1863, 8 vo.
- Lennox, W.G. The Health of Missionary Families in China.
Supplement to China Med. Jl. Jan. 1921.
A Comparative Study of the Health of Missionary Families in Japan and China. Department of Economics, University of Denver, Jan. 1922.
- Lepage, Recherches sur la medicine des Chinois.
Paris, 1813, 4to.
- Lockhart, W. The Medical Missionary in China.
London, 1861, 8vo. German by H. Bauer, Würzburg, 1863, 8vo.
- Morgan, F.A. List of Chinese Medicines.
Chinese Maritime Customs, Shanghai, 1889.
- Morse, W.R. The Three Crosses in the Purple Mists.
Mission Book Co. Shanghai, 1928.
Chinese Medicine.
Paul B. Hoeber Inc. New York 1933.
- Parker, P. Surgical Practice Among the Chinese.
Sutherland and Knox, 1846.
- Pauthier, G. La médecine, la Chirurgie et les établissements d'assistance publique en Chine. Paris, 1860.
- Read, B. E. Reference List to Chinese Materia Medica.
Union Medical College, Peking, 1923.
Hospital Dialogue and Outline of Chinese Medical History.
French Book Store, Peiping, 1930.
Chinese Materia Medica, Animal Drugs.
The French Book Store, Peiping, 1931.
Chinese Materia Medica. Avian Drugs.
The French Bookstore, Peiping, 1932.
Chinese Materia Medica, Dragon and Snake Drugs.
The French Bookstore, Peiping, 1933.
- Read & Liu, J.C. Bibliography of Chinese Medicinal Plants.
Union Medical College, Peking, 1927.
- Read & Pak, C. The Pen Ts'ao, Minerals and Stones.
Peking Society Natural History Bulletin, 1928.
- Regnault, J. Medicine et pharmacie chez les Chinois.
Paris, 1863.

- Rémusat, A. *Recherches historiques sur la médecine des Chinois.*
Paris, 1813, 8vo.
- Shirokogoroff, S.M. *Process of Physical Growth Among the Chinese.*
Commercial Press, Shanghai, 1925.
Anthropology of Northern China.
North China Roy. Asiatic Soc., Shanghai, 1923.
- Smith, F. Porter. *Contribution to Chinese Materia Medica.*
Amer. Presby. Press, Shanghai, 1871.
- Stuart, G.A. *Chinese Materia Medica, Vegetable Drugs.*
American Presbyterian Press, Shanghai, 1911.
- Vincent, E. *La médecine on Chine au xx siècle*
Paris, 1915.
- Report of the International Plague Conference held at Mukden, 1911.*
Bureau of Printing, Manila, 1912.
- Medicine in China, Report of China Medical Commission of the Rockefeller Foundation, 61 Broadway, New York, 1914.*
- Quarterly Reports of the Medical Missionary Society.*
- Report of the Sanitary Department, Hongkong.*
Published annually by the Sanitary Department, Hongkong.
- Medical Report of Shanghai Municipal Council, Health Department.*
Published annually by the Health Department, Shanghai.
- Medical Reports of Chinese Maritime Customs, 1871—1910.*
Published semi-annually by the Chinese Maritime Customs.
- Reports of North Manchurian Plague Prevention Service.*
Published bi-annually by North Manchurian Plague Prevention Service.
- Bibliography of the Publications from the Laboratories and Clinics of the Peking Union Medical College.*
Published annually by P.U.M.C. Press. First No. 1926.
- Index to the China Medical Journal 1887-1925.*
China Medical Association, 1926.
- Index of Chinese Imperial Customs Medical Reports 1871-1910.*
China Medical Association, 1931.
- Medical Directory and Guide. First No. 1928.*
Published bi-annually by the National Medical Association, China.
- The Medical Directory of China. First No. 1930.*
Published annually by Millington Ltd., Shanghai.
- Caduceus. First No. 1922.*
Published quarterly by the Hongkong University Medical Society.
- China Medical Journal. First No. 1887.*
Published monthly by the China Medical Association.
- Chinese Journal of Physiology. First No. 1927.*
Published quarterly by the Chinese Physiological Society, Peiping.
- Chinesische Zeitschrift für die Gesamte Medizin, Peking, 1923.*
- Health (Bi-lingual). First No. 1924. 4 volumes issued.*
Published quarterly by the Council on Health Education, Shanghai.
- Lepor Quarterly (Bi-lingual) First No. 1927.*
Published quarterly by the Chinese Mission to Lepers, Shanghai.
- Journal for Chinese Nurses. (Bi-lingual) First No. 1920.*
Published quarterly by the Nurses Association of China, Hankow.
- Journal of Oriental Medicine.*
Manchuria, 1923.
- National Medical Journal. (Bi-lingual) First No. 1915.*
Published bi-monthly by the National Medical Association of China.

B. ARTICLES FROM DIFFERENT JOURNALS AND MAGAZINES*

- Arlington, L.C. The Mystic Art of Pulse Feeling in China.
China Journ. of Sc. and Arts. Vol. 2, No. 5, 1924.
- Balme, H. The History of Western Medical Education in China.
China Med. Journ. XL, 700, 1926.
- Best, Folklore Relating to Conception and Maternity.
China Med. Journ. XL, 564, 1926.
- Bradshaw, H. V. The Contribution of the Chinese to Medicine.
Lingnan Science Journal, Vol. 8, 1929.
- Cadbury, W.W. Medicine as Practised by the Chinese.
Far East. Rev. July, 1917.
- Cameron, J. Impressions of a British Pharmacist in China.
Md. & East. Drug. July, 1925.
Some Sidelights on Pharmacy in Peking.
Am. Journ. Pharm. No. 97, 665-71, 1925.
- Cameron & Chen, K.K. The Old and the New in Pharmacy in China.
Pharm. Journ. No. 60, 633-36, 1925.
- Cantlie, J. "Needling" Painful Spots as Practised by the Chinese.
China Med. Jour. XXX, 410, 1916.
- Chen, K.K. Chinese Drug Stores.
Annals Med. Hist. VII, 108-109, 1925.
- Chen, & Ling, S.H. Fragments of Chinese Medical History.
Annals Med. Hist. VIII, June, 1926.
- Chu, H.T. & Chiang, I.H. Extracts from Some Old Chinese Medical Books on Worm Diseases. China Nat. Med. Journ. XVII, No. 5, 1931.
- Chuan, S.H. Chinese Patients and their Prejudices.
China Med. Journ. XXXI, 504, 1917.
- Cormack, J.G. Early days of Western Medicine in Peking.
China Med. Journ. XI, 517, 1926.
- Cowdry, E.V. Anatomy in China.
Anat. Rec. XX, 82-60, 1920.
The Renaissance of Medicine in China.
Military Surgeon XLVII, 652-66, 1920.
The Office of Imperial Physicians, Peking.
Journ. Am. Med. As. 7, 807-816.
A Comparison of Ancient Chinese Anatomical Charts with the "Fünfbilderserie" of Sudhoff.
Anat. Rec. XXII, 1-13, 1921.
The Divergence of Art and Medicine in China.
China Med. Journ. XL, 797, 1926.
Art and Medicine in China.
Science Progress. Oct. 1924.
Taoist Ideas of Human Anatomy.
Annals Med. Hist. III, 301, 1921.
- Dawson, P.M. Su Wen, the Basis of Chinese Medicine.
Annals Med. Hist. III, 159, 1925.
- Doré, H. Researches into Chinese Superstitions.
Vol. I, Chapter I, 1914.
- Douthwaite, A.W. Notes on Chinese Materia Medica.
China Med. Journ. II, 119, 165, 1888; III, 53, 1889.

*The following list is from foreign publications only, the numerous Chinese and Japanese articles being not included.

- Du Halde, J.P. *The Art of Medicine Among the Chinese.*
A Description of the Empire of China, Vol. II, p. 183-214, 1738.
- Dudgeon, J. A Chapter in Chinese Surgery.
China Med. Jour. IX, 59, 1895.
A Modern Chinese Anatomist.
China Med. Journ. VII, 245, 1893.
Chinese Arts of Healing, Chinese Recorder, II, 163, 183, 267, 293, 332; III, 40, 99, 120, 334; IV, 282.
The Great Medical College at Peking.
Chin. Recorder, II, 237.
Chinese Treatment of Malaria.
Chin. Imp. Cust. Rep. No. 6, p. 14.
History of Smallpox in China.
Chin. Imp. Cust. Rep. No. 1, p. 7.
Chinese Inquests.
Notes and Queries. III, p. 127.
- Edkins, J. Leprosy.
China Med. Journ. V, 19, 1891.
The Chief Classic of Chinese Medicine.
Chinese Recorder. XVIII, p. 108.
- Faber, E. Philosophy Opposed to Medical Practice in Ancient China.
China Med. Journ. VI, 270, 1892.
- Gerrard, W. I. Manson, the Father of Tropical Medicine.
The Caduceus, Vol. 12, No. 1, 1933.
- Gutzlaff, C. The Medical Art Amongst the Chinese.
Journ. Roy. As. Soc. Great Brit. & Ire. IV, 154-171, 1837.
- Hanbury, D. Synopsis of the Contents of the Chinese Herbal.
Pharm. Journ., July & Aug. 1860.
- Harland, W.A. Chinese System of Anatomy and Physiology.
Trans. N. China Roy. Asiatic Soc. 1847.
- Henderson, J. The Medicine and Medical Practice of the Chinese.
Trans. N. China Roy. Asiatic Soc. 1864.
- Hsieh, E. J. A Review of Chinese Anatomy.
Anat. Rec. XX, 97, 1921.
- Hu Hing-tak. The Contrast Between Modern Medicine and Ancient Chinese Medicine, Caduceus, Vol. 13, No. 1, 1934.
- Hume, E. H. Relationship in Medicine between China and the Western World. China Med. Journ. XXXIX, 185, 1925.
- Jellison, E. R. Translation of a Chinese Work on Ophthalmology.
China Med. Journ. XIII, 84, 1899.
- Kerr, J. G. Chinese Medicine.
China Review 1872.
- Kiang, P. C. Chinese Drugs of Therapeutic Interest to Western Physicians. China Med. Journ. XXXVII, 742, 1923.
- King, G. A Chinese Chemist Shop.
Far East. Rev. Jan. 1919.
- S. Kubota. "Han Yao", The Chinese Materia Medica, from which Modern Medicines have been prepared in Nippon in Recent Years.
Trans. Ninth Congress, Far East. Assoc. Trop. Med. 1934.

- Lee T. A short History of Infectious Diseases in China.
Chinese Med. Journ. Vol. 50, No. 2, 1936.
- Liang, P. K. Chinese Medicine, a Lecture delivered at the Union
Church Literary and Social Guild, Tientsin, March,
1934.
- Lim, E. H. Some Native Cures and Superstitions.
The Caduceus. II No. 3, 1923.
- Lockhart, W. Description of Chinese Anatomical Plates.
Chin. Reposit. IX, 194.
Treatise on Chinese Midwifery.
Dublin Journ. Med. Sc. 1842.
- Macgowan, D. J. Ancient History of Beri-Beri in China.
Chin. Imp. Cust. Rep. XXII, p. 40.
History of Cholera in China.
Chin. Imp. Cust. Rep. XXVI, p. 26; XXVII, 9.
Chinese Toxicology.
Proc. N. China Roy. Asiatic Soc. 1874.
- Manson, P. Science and Practice of Western Medicine in China.
China Review XXVIII, 1888.
- Mar, P. G. Glimpses into Chinese Medical Literature.
Medical Journal of University of Manitoba, 1929
- Maxwell, J. L. Century of Medical Missions in China.
China Med. Journ. XXXIX, 934, 1925.
History of Cholera in China.
China Med. Journ. XLI, 595, 1927.
- Maxwell, J.P. & Feng. The Old Obstetrical and Gynaecological Works of China.
China Med. Journ. XLI, 643, 1927.
- Maxwell, J. P. A Chinese Household Manual of Obstetrics.
Annals Med. Hist. V, 95, 1923.
Obstetrics in China in the 13th Century.
Journ. Obst. & Gyn. Brit. Emp. XXXIV, 481, 1927.
- McClure, F. A. and
Hwang Ts'ui-mae The Flora of a Canton Herb Shop.
Lingnan University Science Bulletin, No. 6, 1934.
- Morant and
Ferreyrolles L'Acupuncture en Chine vingt siecles avant J. C. et
la reflexotherapie modern.
L'Homoeopathie Francaise, June, 1929.
- Nakao, Manzo. The Ancient Chinese Materia Medica Revised in the
Sung Dynasty Shao-hsing Period (1131-1162).
Journal of the Shanghai Science Institute, Vol. 1. May,
1933.
- Neal, J. B. Native Inorganic Drugs.
China Med. Journ. V, No. 4, 1891, II, 116, 1888.
- Pi, H. T. History of Spectacles in China.
China Med. Journ. XLII, 742-47, 1928.
Native Ophthalmic Practice in China.
Nat. Med. Journ. China. VI, 188, 1920.
Historical Sketch of Native Ophthalmology in China.
Nat. Med. Journ. XV, 604, 1929.
A Resume of an Ancient Chinese Treatise on Ophthalmology: "The Yin Hai Ching Wei".
Nat. Med. Journ. XVII, No. 1, 1931.
- Pollitzer, R. The History of Certain Infectious Diseases in China.
Rep. Manch. Plague Preven. Service VII, 1930.

- Read, B. E. Toxicology in China.
Pharm. Journ. Vol. 59, 293-95, 1924.
Ancient Medicine.
Far East, Times, Oct. 26, 1926.
Some of the Old Chinese Drugs used in Obstetrical Practice. Journ. Obst. & Gyn. Brit. Emp. XXXIV, 498, 1927.
Gleanings from Old Chinese Medicine.
Annals Med. Hist. VIII, 16-19.
Treatment of Worm Diseases with Chinese Drugs.
Nat. Med. Journ. China, XVII, 644, 1931.
Chinese Materia Medica.
China Med. Journ. XXXVII, 147, 589, 925, 1923.
A Comparison of the Materia Medica of India & China.
Lingnan Science Journal, Vol. 8, 1929.
The Newer Pharmacology and its Relationship to Ancient Medicine. Trans. Ninth Congress, Far East. Assoc. Trop. Med. 1934.
Notes on the History and Treatment of Urinary Calculi in China. Chinese Med. Journ. Vol. 50, No. 6, 1936.
- Read and Liu, J. C. A Review of the Scientific Work done on Chinese Materia Medica. Nat. Med. Journ. XIV, Oct. 1928.
- Selden, C. C. The Life of John Kerr.
Chinese Med. Journ. Vol. 49, No. 4, 1935.
- Swain, A. Chinese Medicine.
The New Mandarin. I, No. 3, 1926.
- Thomson, J. C. Bibliography of Chinese Materia Medica.
China Med. Journ. IV, 117, 1890.
Surgery in China.
China Med. Journ. VI, 219, 1892-1893.
Native Practice and Practitioners.
China Med. Journ. IV, 175, 1890.
The Heavenly Flowers.
China Med. Journ. I, 157, 1887.
- Tsay, Q. Chinese Superstitions Relating to Childbirth.
China Med. Journ. XXXII, No. 6, 1918.
- Turner, S. Medical Practice in Thibet in 1806.
Nat. Med. Journ. China. IV, June, 1918.
- Walsh, E. H. C. The Tibetan Anatomical System.
Journ. Roy. Asiatic Soc. Brit. & Irel. II, 1215, 1910.
- Williams, S. W. Science Among the Chinese, Medical Section.
The Middle Kingdom, 1888.
- Wang, C. Y. A Resume of Medical History in Europe and in China.
Lingnan Science Journal, Vol. 8, 1929.
- Wong, K. C. Chinese Medical Superstitions.
Nat. Med. Journ. China. II, Dec. 1916; III, March, 1917.
Chinese Medical Literature.
China Med. Journ. XXXII, 154, 1918.
An Inquiry into some Chinese Sexual Diseases.
Nat. Med. Journ. China. IV, March, 1918.
Origin of Syphilis and Gonorrhoea in China.
Nat. Med. Journ. China, IV, June, 1918.
Smallpox in China.
Nat. Med. Journ. China, IV, Sept., 1918.

- Chinese Medical Schools and State Examinations.
Nat. Med. Journ. China, V, June, 1919.
- The Social Evil in China.
China Med. Journ. XXXIV, 630, 1920.
- Anaesthetics in China.
China Med. Journ. XXXV, 472, 1921.
- Chinese Hospitals in Ancient Times.
China Med. Journ. XXXVII, 77, 1923.
- Status of the Medical Profession in China.
China Med. Journ. XXXVIII, 674, 1924.
- Was the Circulation of Blood Known in Ancient China?
China Med. Journ. XXXVIII, 577, 1924.
- Chang Chung-king, the Hippocrates of China.
China Med. Journ. XXXVIII, 940, 1924.
- Chinese Medical Sayings and Proverbs.
China Med. Journ. XXXIX, 1099, 1925.
- Hua To, the God of Surgery.
China Med. Journ. XLI, 695, 1927.
- The Pulse Lore of Cathay.
China Med. Journ. XLII, 884, 1928.
- Four Milleniums of Chinese Medicine.
Lancet July 20th, 27th, Aug. 3rd, 1929.
- China's Contribution to the Science of Medicine.
China Med. Journ. VLIII, 1193, 1929.
- The Early History of Leprosy in China.
China Med. Journ. XLIV, 737, 1930.
- Wu Lien-teh An Enquiry into Ancient Chinese Ideas of Treating Poison Cases. Nat. Med. Journ. China, II, June, 1916.
- Ancient Chinese Contributions to Surgery.
 Manchu. Plague Prevent. Serv. Rept. VII, 1929-1930.
- Early Days of Western Medicine in China.
 Manchu. Plague Prevent. Serv. Rept. VII, 1929-1930.
- Modern Chinese Physicians and Practice.
 China Mission Year Book 1926.
- Wu, S. C. Chinese Medicine.
 Chinese Recorder LVI, 11, 1925.
- Wylie, A. Medical Writers.
 Notes on Chinese Literature p. 95-105, 1867.
- Yü, H. Tetanus in Ancient Medical Literature.
Nat. Med. Journ. China, XVI, 297-300, 1930.

BOOK TWO

INTRODUCTION AND DEVELOPMENT OF MODERN MEDICINE IN CHINA

INTRODUCTION TO BOOK TWO

“Vernunft wird Unsinn,
Wohltat Plage,
Weh’ Dir, dass Du ein Enkel bist.....”¹
Goethe.

The foregoing study of the development of Chinese medical art and science from 2697 B.C. to 1801 A.D. may not unnaturally give rise to the impression that medicine in this country has become rigid in the fetters of tradition. Our task, however, is not so much to dwell upon this traditional non-progressive state of thought as to utilise it as a background for an attempt to picture the victorious entry of modern medicine into this ancient land of Cathay.

The more we delved into this study the clearer we realised that a great deal of the success of ‘western’ medicine in China was due not so much to spectacular deeds as to painstaking individual efforts in piling brick after brick to complete the edifice before us. The task has been rendered more difficult by our desire to make the great events stand out in proper relief without at the same time throwing into shadow the slow but irresistible efforts of innumerable men and women.

Of one thing we feel certain. While we have naturally liked to emphasise the labours of Chinese physicians, due credit has been given to foreign colleagues, past and present, for their share in evolving an up-to-date conception of medicine for China. At the same time, the co-operation between Chinese and foreign forces at work in the field of medical science in this country is rendered increasingly effective by the close collaboration of the League of Nations and the Rockefeller Foundation. It is our belief that any future extension of this ‘symbiosis’, as it were, will tend towards an even closer tightening of the bonds that bind together China and the rest of the world.

Book Two is an attempt to depict the salient features which, starting with the advent of the missionaries and followed by the intense individualistic efforts that characterised the middle of the last century and by the public health activities of the past thirty years, have made the Fourth Period of this History remarkable in achievement though transitional in character.

In this country, the modern conception of public health, as the West understands it to-day, had its beginning only after the terrible outbreak of Pneumonic Plague of 1910 had swept over Manchuria and claimed 60,000 lives. For a century previously, medical progress had in the main been due to the widely scattered efforts of foreign missionaries and their Chinese assistants in treating the sick by western methods, and in attempting to inculcate a spirit of tolerance towards modern ideas.

The impetus to preventive medicine derived from the successful labours of the past two and a half decades in the control of epidemics is good augury for the future. It must not be forgotten, however, that western methods cannot permanently flourish without taking into account the peculiar conditions obtaining in this land. To introduce bodily the medicine of Europe and America into China without attention either to the traditional background or to the special needs of the masses would be as unwise as it would be unworkable. Adaptation, rather than mere transplantation, should be the watchword of medical workers during the next fifty years. Just as in the past she has absorbed, racially and politically, her alien conquerors, so China will undoubtedly in the course of time incorporate the best elements of the new medicine and utilise them for the benefit of all.

In the preparation of this Book we have not hesitated to avail ourselves of the kind help so unstintedly extended us by both foreign and Chinese colleagues. While it is not feasible to thank everyone individually, we take pleasure in expressing our gratitude to the following gentlemen:

H. E. Mgr. Celse Constantini, Apostolic Delegate to China, whose instruction to the Bishops and priests in charge of different posts to supply information on Catholic work have been fully carried out;

Dr. James L. Maxwell, son of the pioneer Maxwell of Formosa, whose invariable kindness and sympathy have contributed not a little to the completion of this Book;

Dr. William Cadbury of Canton, who has taken unusual trouble to elucidate certain doubtful points in the medical history of South China—the cradle of modern medical effort in this country; and lastly,

Dr. J. Heng Liu, Director General of the National Health Administration, Nanking, who on several occasions has given valuable advice.

WU LIEN-TEH.

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1. "Reason becomes nonsense,
Benefit turns into torment.
Woe unto thee
That thou art a grandson.

CHAPTER I
PERIOD BEFORE 1600
EARLY CONTACTS BETWEEN CHINA AND
WESTERN MEDICINE

Earliest Euro-Asiatic contact—Influence of Buddhism—Arrival of a foreign medical man A.D. 738—European physicians on the staff of the Mongol conquerors—Isaiah establishes hospital at Peking (A.D. 1272)—Activities of Nestorian Christians—First Catholic Missionaries—Early Portuguese hospitals at Macao.

In order to trace as far as possible the early connection of ancient Cathay with western (or modern) methods of treating sickness, we must ascertain the occasions when East and West first met and see if any exchange of medical ideas took place at such meetings.

There is much reason to assume that regular intercourse between China and the West took place long before the opening of the silk trade route over the Pamirs in the first century B.C. If we believe with G. F. Hudson (1) that the Hyperboreans mentioned in the poem *Arimaspea* by Aristeas of Proconnesus are identical with the Chinese, then a trade route from the Black Sea across Central Asia must have existed in the 6th or 7th century B.C. It would seem that Aristeas himself visited the Issedones in modern Sinkiang. Another interesting point is that India, though not definitely known to China before its discovery by Chang Ch'ien from the northwest, appears to have been reached at an earlier date by indirect trading through the primitive tribes to the southwest of China. It is, however, unlikely that through these circuitous channels, devoted principally to the export of Chinese goods, western influences flew back to China.

As far as we know it was during the reign of Wu Ti (B.C. 140-87), greatest of the Han emperors, that direct contact of China with Western Asia was established. The background was a political one, arising out of the incessant warfare between China and the Hiong-nu (or Huns of European history) of Mongolia. According to the *Shih-chi* of Szu-ma Chien, the great contemporaneous historian, Wu Ti wanted to get in touch with the Yue-chi who, originally living in West Kansu, had migrated west after having been crushingly

defeated by the Hiung-nu. Chang Ch'ien was chosen for this mission which he was able to fulfil in 128 B.C. after having been kept a prisoner by the Huns for ten years. According to the *Shih-chi* he visited Ta-yüan (Ferghana), the Yue-chi (near Bokhara), the K'ang-kü (tribes near Samarkand and Tashkent) and Ta-hia (Bactria) besides reporting on other countries including An-si (Parthia), Li-kan (Seleucid Syria), T'iao-chih (Babylon) and Yen-tu (India). Returned to China he brought with him a great store of carefully collected geographical information and also the seeds of the vine(1).

Since attempts to establish permanent relations with the west via India proved futile, war was waged against the Hiung-nu who were driven away to the north (B.C. 121). During the next few years embassies were despatched to all countries mentioned in Chang Ch'ien's report. As stated in the *Shih-chi*,

such missions would be attended by several hundred men, or by a hundred men, according to their importance. At least five or six missions were sent out in the course of a year, and as a rule more than ten; those sent to distant countries would return home after eight or nine years, those to nearer ones within a few years.

Commenting upon these undertakings Hudson maintains that probably not all these embassies reached their destination; it was easy enough for envoys despatched to the extremities of the known world and dismayed by the distance or dangers of the road to collect a few curios from some fairly remote region and return with an imaginary account of countries they had not reached. . . .

Wu Ti's policy in Central Asia culminated in the conquest of Ferghana by the war of 104-100 B.C. Afterwards more than ten embassies were sent from China to countries west of Ferghana "to collect curiosities and at the same time impress upon such countries the importance of the victory over Ferghana." Gradually through Western Asia an indirect trade route developed, linking China with Europe. During the early years of the first century the use of silk spread from Parthia to the Mediterranean.

It will be thus noted that close intercourse of China with Western Asia at least had been established. Whether the information brought back by the embassies comprised healing methods and the curiosities included foreign drugs, it is difficult to say but not at all unlikely.

We reach somewhat firmer ground with the official introduction of Buddhism into China at the time of the later Hans (about A.D. 67). There seems little doubt that this new Indian cult, openly encouraged by the Eastern Han Emperor Ming Ti (A.D. 58-76) exerted its profound influence not only upon Chinese culture but also upon

(1) Europe and China—A Survey of their Relations from the Earliest Times to 1800, London, 1931.

medical thought. Huebotter, for instance, points out(2) that Ko Hung (葛洪) (A.D. 281-361) in his *Chou-hou-fang* (肘后方) and T'ao Hung-ching (陶弘景) (about 450 A.D.) each devoted 101 chapters to the 101 maladies believed to exist by the Buddhist lore. Sun Szu-mo (孫思邈) (7th century) based his *Ch'ien-chin-fang* (千金方) upon Taoist doctrines but intermixed them with Buddhist theories—to no great advantage, it seems.

The earliest information we possess in regard to the arrival of a medical man from the West refers to the year 738 when

there appeared in the capital a singularly attired foreigner; he wore a velvety robe and a gauze cap; he was peculiarly shod and bore a staff; attached to his girdle were calabashes, several tens in number, containing medicines, which he freely distributed to the ailing. His fame reached the palace, and the Emperor sent for the foreigner, who announced himself as an "obtained doctrine" (teh-tao) man from India. His Majesty was so gratified with him that he ordered his portrait to be taken and conferred on him the title of Medicine Prince. His name was Weiku. . . .

Dr. Macgowan, to whom we are indebted for this record (3) added that according to another source this man came from Sumatra but that

probably he had made himself famous in that island after quitting India before coming to China. He is described as having teh-tao, the Buddhist term for one who has entered Nirvana. He was not a Buddhist, however, yet a man of lofty religious character, but whether Brahmin or Mussulman, does not appear. . . .

European physicians were probably scattered among the learned foreigners on the staff of the Mongol conquerors. This belief is vouchsafed for both by Persian records and by the Mongolian chronicles which latter speak of a *Fuh-lin* (Frank or European) Aisie (Isaiah), linguist, astrologer and physician. He first served Kyuk Khan and subsequently (A.D. 1263) he was chief physician and astrologer to Kublai. In 1272 he opened a hospital at Peking, officially called the 'Broad Charity.' A later record (1273) styles him a Mussulman and not, as heretofore, a Christian (4). Towards the end of Kublai Khan's (Shih-Tsu's) reign, A.D. 1290, it was noticed that Chinese engineers and physicians were practising their professions at Tabriz and other cities in Iran (Persia).

Possibly some medical activity was displayed by the Nestorian Christians, whose first churches were built in Honan as far back as A.D. 635 (5). We read of the Nestorian *Mar Sergius* or *Sargis*, a physician from Samarkand, who in 1277 or 1278 was appointed governor of Chinkiang and built monasteries in and near this city, where probably medical aid was given to the poor(6).

(2) Die Chines. Medizin zu Beginn des 20. Jahrhunderts, etc. Leipzig 1929, p. 345.

(3) Customs Medical Reports No. 22 (1881), p. 32.

(4) E. H. Parker, China and Religion, p. 181.

(5) A. C. Moule, Christians in China before 1550 (1930).

(6) Latourette, A History of Christian Missions in China, p. 64.

China was visited in the latter part of the thirteenth century by Roman Catholic Missionaries, and in 1294 the Franciscan, John of Montecorvino, reached Cambaluc (Peking) and was appointed Archbishop by Pope Clement V in 1307. He was able to found a flourishing community in the capital and it is quite possible that the works instituted by him, his helpers and successors, embraced some kind of medical undertakings though we could not find any definite reference to this phase. Be this as it may, all these early endeavours of Christianity were cut short by the break-up of the Mongol empire. One consequence of this was the closing of the overland route to China which prevented new missionaries from reaching the country until the sea route became better known.

Before closing this necessarily short survey of the earliest period we must cast a glance upon the settlement of Macao, opened to the Portuguese in 1557. Here western practitioners had probably been working from the very first. We know definitely that in A.D. 1569, the Misericordia Hospital (*Santa Caza da Misericordia*) with its church in Senate Square was founded by Bishop D. Belchior Carneiro. In 1593 two hospitals are said to have existed, while in 1667 the Hospital "Civil de S. Raphael," belonging to the *Santa Caza da Misericordia*, was constructed. According to Damas Mora and Soares the original Misericordia Hospital comprised also a Hospice for Lepers which continued to exist for several centuries, housing early in the 17th century about 70 patients of both sexes(7).

(7) J. C. Thomson. Chin. Recorder. Vol. 18, p. 213; Damas Mora and Soares, Chin. Med. Jl., 1936, p. 721.

CHAPTER II
PERIOD BETWEEN A.D. 1600 AND 1800
DEALING MAINLY WITH THE INFLUENCE OF
CATHOLIC MISSIONARIES

Francis Xavier—Charitable work of Candida—Father Terrentius—Anatomy published in Chinese—Father Boym and his medical writings—Jesuit Fathers treat Emperor K'ang Hsi with quinine—Father Parrenin translates anatomical work into Chinese—Splendid activities of physicians sent out by the Jesuit Order at Peking—General appreciation of work of Jesuits—Franciscan Fathers—Value and limitations of Catholic medical work—Activities of Russian physicians at Peking.

As mentioned in the preceding chapter, Catholic missionaries again went to China as soon as the sea route became practicable. Francis Xaxier attempted to reach the mainland, but died in 1552 on the island of Shang-ch'uan off the coast of Kwangtung. From this date, however, China has been visited by a constant stream of Roman Catholic missionaries, particularly Jesuits. Their scientific knowledge soon won them the favour and esteem of the Chinese. Two of their number became Presidents of the Board of Mathematics (controlling the observatories and calendar affairs) in Peking. Hand in hand with these official duties they were engaged from the first in charitable works, some of which were of a strictly medical nature.

The earliest information available in regard to organised medical work reaches back to the time of the great missionary Matteo Ricci (1552-1610). Among his converts was the Minister Hsu Kuang-chi (Ko Lau) who received baptism under the name of Paul. His granddaughter, called *Candida* (1607-1680) in missionary annals, showed the same religious piety(8). Her history was quite remarkable. Married at sixteen years she became a widow at thirty. Thereafter she devoted her whole life to religious works, specially in the provinces of Kiangsi, Hu-kuang and Szechwan, whither she followed her son Basilius, Intendant General of the Posts and Navigation. Among the

(8) Du Halde, A. Description of the Empire of China, etc., London, 1741, Vol. II, P. 9.

charities instituted by her in those parts was a foundling hospital and orphanage. As Du Halde says

there were no Methods which the ingenious Zeal of this Lady did not invent to propagate the Knowledge and extend the Influence of Christianity. Being sensible that numbers of poor People, for want of necessities to support Life, exposed and abandon'd their Children as soon as born, she by the Interest of her Son obtained of the Viceroy of Su-chew permission to purchase a large House, where she lodged the Infants thus exposed, and provided them with Nurses. The Number of these Children was so great that, notwithstanding all the Care could be taken, upwards of two hundred died every year.

Soon afterwards the ranks of the Jesuit Fathers in China were joined by a great scholar and physician, Father Jean Terrenz (鄧玉函璞) (or *Terrentius*), called Schreck before he took holy orders. Born A.D. 1576 at Constance in Switzerland he became widely known and appreciated as physician, philosopher and mathematician. Skilful and successful cures endeared him to royalty and princes, who conferred upon him exceptional favours(9). Yet at the age of 35 he renounced all splendours and joined the Jesuit Order. Being attached to the Overseas Mission he embarked from Lisbon together with another priest in April, 1618. Arriving in the East he undertook long journeys in India, Malacca, Sumatra, Cochin-China and China, everywhere collecting samples of minerals, plants and animals as well as undertaking climatological and ethnological studies. Being an excellent painter he supplemented his collections with creations of his brush, with the intention of embodying all in a bulky volume called "*Plinius Indicus*." Besides his manifold activities he found time to practise medicine and to convert patients cured by his skill.

Arriving in Macao in 1621 this brilliant man was—incredible to relate—first sent to Hangchow to work as an ordinary missionary, and summoned to Peking only when his services were required for revising the calendar. He concentrated all his energies upon this task which was not only of the greatest importance to the Chinese Government but at the same time provided the *raison d'être* for the presence of Jesuits in China. Whilst still in the preparatory work he died A.D. 1630. His *magnum opus* "*Plinius Indicus*" was unfinished at the time of his death and never published. Among less important works which appeared during his lifetime, one on the structure of the human body published in the Chinese language deserves attention (人身說概). Though later critics have, with some reason, dealt harshly with this small treatise (being poor both in text and illustrations) the historical importance of this first attempt to bring western medical knowledge to Chinese scholars should not be underrated.

(9) The information about this and the following Jesuit-doctors is mainly culled from: Pfister, *Notices Biographiques et Bibliographiques sur les membres de la Compagnie de Jesus en Chine*, etc., re-edited and kindly put at our disposal by Father de la Servière, Librarian at Zikawei.

Mention may be made in passing of Father Michael Boym (卜彌格致遠) who in his turn tried to bring some knowledge of Chinese medical lore to the west. He was born in 1612, the son of the physician-in-ordinary to King Sigismund of Poland. As shown by his works he must have acquired a fair amount of medical knowledge, yet instead of choosing the profession of his father he entered the Jesuit order in 1629. Departing from Europe in 1643 he stayed first in Tonkin, then (A.D. 1647 or 1648) in Hainan, finally in Kuangsi at the Court of Yonglie. From here he was sent to Rome bearing with him letters from Empress-Mother Helen and the chancellor Pan; he embarked at Macao in 1651, travelled to Goa and then *via* the land route to Smyrna and then Venice (1652). Eventually he reached Rome where the successor of Innocent X, Pope Alexander VII, gave him messages for the Empress-Mother and the chancellor. During his absence from China great changes had taken place; the Ming dynasty had been overthrown and the Emperor as well as all male members of his family killed or executed. Thus when P. Boym arrived in Siam (1658) he found the route through Macao impracticable. Trying to reach his goal from Tonkin he died A.D. 1659.

Among the works left by Boym were:—

- (1) *Flora sinensis* (Vienna 1656)—a short description of a score of Chinese plants and some peculiar animals;
- (2) *Clavis medica ad Chinarum doctrinam de pulsibus*.

This comprised (a) four books by Wang Chu-ho on the pulse (王叔和); (b) a treatise on the aspect of the tongue in different diseases and (c) an exposition on simple drugs prepared by the missionaries according to the directions of Chinese authors. The whole manuscript together with a few other fragments was sent in 1658 by Father Couplet to Batavia to be dispatched thence to Europe. But due to the disagreement between the Jesuits and the Dutch company⁽¹⁰⁾, the author's name was suppressed and the book published in 1682 by Andreas Cleyer, *Protomedicus* to the Company, under the title of "*Specimen Medicinae Sinicae*." Wood-cuts illustrating the Chinese doctrine of the pulse, the semeiology of the tongue as well as thirty plates of Chinese anatomy were added. An authentic edition bearing the name of the right author and under the original title was published in 1686.

Still more interesting than the achievements of Boym were those of other Jesuit Fathers who, though not properly qualified medically, had an opportunity to prove to the Court at Peking the superior qualities of certain western medicines. The famous Emperor K'ang Hsi (1662-1723) was attacked in 1692 by a malignant fever which was

⁽¹⁰⁾ The Dutch ascribed to the Jesuits the failure of an embassy they had sent to Peking in 1656.

relieved by Fathers Gerbillon and Pereyra administering some "medicinal lozenges which Lewis the XIV had ordered to be distributed to all the Poor in his Kingdom" (11). Later when recurring symptoms of Tertian ague appeared and defied the skill of the imperial physicians, proclamations were issued that anyone knowing of a remedy against this ailment should at once impart it to the court where a special commission composed of

four of the greatest Lords about Court, of whom Prince So-san was one, were to receive the Remedies, and to assist at the Tryal of their Effects. All Sorts were tryed, and a Bonza particularly distinguished himself: He caused a Bucket of fresh Water to be drawn out of a Well, of which he filled a Glass, placing it first in the Sun, and lifting his Eyes and Hands up to Heaven, then turning himself to the four Quarters of the World, he put himself into a hundred Postures, which seemed to be somewhat mysterious. These Ceremonies being over, he caused the Patient on his Knees to drink off the Glass, who continued in that Posture expecting his Cure; but the remedy proving ineffectual, the Bonza was looked upon as an imposter(11).

The missionaries possessed a pound of cinchona bark which had been received by Father de Fonteney from India. They offered this and three patients confined in the palace for experimental treatment were speedily cured by its action. Encouraged by this the Emperor partook of the remedy with the same spectacular result.

Soon after his recovery, K'ang Hsi rode fearlessly from the palace into the city with a great following and permitted the people, who as a rule were driven away whenever the Emperor appeared in town, to remain in the streets, an event which had never happened before. Among those accompanying the Emperor were the four Fathers, Gerbillon, Bouvet, Fonteney and Vissdelon: they were allowed to stand while even the highest officials went down on their knees and touched the ground with their foreheads. In a loud voice, the Emperor turning towards the missionaries said: "You Europeans have always served me with zeal and affection, and I have not the least thing for which to reproach you. Many Chinese mistrust you, but I, who have carefully watched your movements, am so convinced of your honesty and probity that I openly and publicly say: 'You shall be believed and trusted!'" K'ang Hsi then proceeded to tell the people how ill he had been and how the foreign guests had restored him to health again. A huge and commodious house within the First Court of the Palace was presented to the Jesuits and soon afterwards an adjoining piece of ground where they erected with K'ang Hsi's help the Church of *S. Sauveur*.

We have noted that Terrentius had already compiled a book on human anatomy in Chinese. A more elaborate attempt in this direction was made by Father Dominique Parrenin (1669-1741) who

(11) Du Halde, loc. cit., p. 29.

translated "L'anatomie de l'homme suivant la circulation du sang, et les nouvelles decouvertes par Dionis," into the Manchu (Mandarin) dialect(12). To the eight volumes of this translation Parrenin added a ninth dealing with Chemistry, Toxicology and Pharmacology. After five years' labour this task was finished and he submitted the work to the aged Emperor. Perhaps through intrigues of the court physicians, it was never printed. Sending another copy to the French Academy, Father Parrenin wrote:—

No doubt you will be surprised, Gentlemen, that I am sending you from this distant country a Treatise on Anatomy compiled in a language unknown to you. But your surprise will cease when you learn that these are your works which I send you dressed à la tartare. Yes, Gentlemen, these are your theories and your ingenuous discoveries.....

We do not know whether or not this copy still exists. Pfister claims that two handwritten copies are extant in China—one in the Dudgeon Library, the other in the Russian Legation, Peking.

It stands to reason that the charitable acts instituted by Candida were continued and enlarged by successive missionaries, specially the home for foundlings in whose souls rather than their bodily welfare the Church was interested. It is certain that about A.D. 1700 an organisation of lay Christians existed which provided among other things for the care of the sick(13). Besides, we know of quite a number of qualified medical men in the ranks of the Order who performed signal services for the indigent ones.

Mention must first be made of Brother Bernard Rhodes (羅德先慎齋). Born in 1645 in the province of Toulouse he joined the Jesuit Order in 1675. Being first attached to the Indian Mission, he had been made prisoner when the Dutch took Pondicherry and was later on incarcerated at Amsterdam. Undaunted by this he volunteered for China where he arrived together with Father Pelisson in 1699. Being able to benefit several patients who had been treated in vain by the native practitioners, he soon won general confidence and opened a kind of dispensary in his house. Even the Court officials were impressed by this foreign doctor saying that contrary to the native practitioners he

talks little, promises little and performs much. What we further admire are his sweetness and his patience; nothing daunts him and he is always the same; his charity extends to everybody, to poor as well as rich. The only thing which discomforts us is that we cannot induce him to accept the least reward. Only to offer such pains him and drives him away.....

The Emperor himself was twice relieved by Brother Rhodes, once for palpitation of the heart, the second time for a boil on the upper lip. The treatment of the latter ailment necessitated the removal of

(12) This standard work by Pierre Dionis appeared originally in 1690 (Garrison, History of Medicine, p. 341.

(13) Huc. Christianity in China, Tartary and Thibet, Vol. 3, pp. 226-229.

a few hairs from the scanty beard of the august patient—a delicate operation which was entrusted to one of his eunuchs. Great was the ire of the Emperor when he detected that *four* of the precious hairs had been clipped whereas *three* would have been sufficient!(14). It would seem that Brother Rhodes gradually became regular medical attendant to the Emperor whom he accompanied on his travels. To reward the Order for these services the Emperor handed over gold ingots, then worth 200,000 francs.

While at Jehol (?) in Tartary, the Brother fell ill—evidently with pneumonia—and died en route to Peking (A.D. 1715).

In the same year (1715) Brother Jean Joseph da Costa (羅懷忠子敬) arrived in Peking. Born in Calabria in 1679 and having studied pharmacology and surgery with able masters, he entered the Jesuit Order in 1700. He worked more than 30 years at Peking, keeping a dispensary where he daily distributed medicines and treated surgical cases. Held in great esteem by high and low he received from recovered patients drugs to compose his medicines or money to buy them. Though he accepted such gifts only when a refusal would have given offence he was able to buy some fields, the revenue from which he used to carry on the dispensary for the poor. While often summoned to Court and palaces he preferred to treat indigent patients and was ever ready to visit them in their houses and to spend hours at their bedside.

Naturally he endeavoured to save the souls of his patients as well as attending to their bodily ailments—a task in which he was most successful. Among those baptized by him were numerous moribund children abandoned by their mothers. Brother da Costa paid special attention to this, instructed the Christian midwives in children's diseases and supplied them with drugs. Thus they found easy access to the houses and could baptize the dying infants.

The last six months of his life the Brother suffered from an ulcer contracted while administering to the sick. He succumbed on March 1, 1747. His funeral procession was honoured by presents from the Emperor, while countless poor and infirm followed.

Not less distinguished was the contemporaneous work of Brother Etienne Rousset (安泰自得), born in 1689 and arriving in China A.D. 1719. He accompanied the Emperor K'ang Hsi during his last journeys as physician and apothecary. Brother Rousset was generally known under the name of the Charitable Physician and large crowds attended his dispensary where he received patients every morning and afternoon at fixed hours. He died at Peking on September 2, 1758.

(14) Dudgeon, Chinese Recorder, Vol. III, p. 337.

Another much loved physician was Brother Emmanuel de Mattos (羅啓明曜東) (1725-1764), who arrived in Peking in 1751. He was an able surgeon and, though urged by his superiors to become a full priest, he preferred to remain a brother so as to have more time to care for the sick poor. Through constant overwork he contracted lung tuberculosis and died in 1764.

The last of this series of great physicians was Brother Louis Bazin (巴新懋修), who was born in 1712 and left for the East in 1735. Attached to the Persian Mission he became first physician to Thomas Kuli-Khan whom he accompanied on his expeditions (1741-47). When this prince died, the Brother was robbed and in great danger of being murdered as well. He managed to escape to Ispahan but was again in mortal peril when the Kurds sacked this town in 1750. He was able, however, to leave for India and stayed at Pondicherry until 1765. Brother Bazin then went to Canton but was refused permission to proceed to Peking. At this time the Emperor's fifth son fell ill and the Jesuits were asked whether any of them possessed thorough medical knowledge. The Fathers, who had learnt of Brother Bazin's arrival, recommended him and a messenger was hastily dispatched to Canton to fetch him. The Brother had, however, departed in the meanwhile and returned more than a year later when he immediately received permission to travel to the capital. He arrived there in 1768 and was attached to the Court until his death in A.D. 1774.

Mention must finally be made of Father Pierre Cibot (韓國英伯督) because, though not a physician, he alluded in his numerous writings to matters medical. This distinguished scholar was born in 1727 and arrived in China in 1758 where he was attached to the Court and stayed until his death in 1780 at Peking.

Out of the many contributions made by Cibot to the *Memoirs of the Peking Missionaries* the following deserve our notice:—

- (1) *Memoire sur la petite verole* (IV, pp. 392-420).
Here, relying upon a study of old Chinese books, he maintains that small-pox had been known in China for 8,000 years.
- (2) *Notice sur le Kung-fu, exercice superstitieux de Tao-se, pour guerir certaines maladies.*
- (3) *Notices sur differents objets, le vin, l'eau de vie, le vinaigre et la maniere de le faire, les remèdes pao-hing-che ou kou-tsieau, les raisins secs de Hami, la teinture chinoise, etc.* (V. p. 467).
- (4) *Essai sur la longue vie des hommes de l'antiquité et principalement en Chine* (XIII, pp. 309-375).
Here he adduces as reasons for longevity a simple mode of life, moral purity, benevolence of the government, hygiene and principles of medicine.

Reviewing these early medical activities of the Jesuits, it must be stated that though full of promise they left but few permanent traces. The reasons are not far to seek. The Chinese, while profiting

in large numbers from the medical services of the Jesuits, did not seek to adopt the principles of European treatment for themselves. On the other hand it would seem that the Superiors of the Order did not realise the great importance which medical work might play in propagating the faith or, because they possessed a strong foothold in Peking through their mathematical and astronomical skill, they paid insufficient heed to medical matters. Terrentius, for instance, with his splendid medical training, was first sent to Hangchow and only called to the capital for consultation upon the calendar. Brother de Mattos was urged to become a full priest and thus curtail his usefulness as a surgeon. Nevertheless, it is possible that the Jesuit Order would have continued to send out medical men to China if their whole work had not been cut short by the dissolution of the Society of Jesus in 1773. News of this event reached China in 1774; the Fathers then present in that country continued to work as priests of the Church but were naturally much hampered by lack of support from their once all-powerful Order.

We must now turn our attention to the year 1731 when the Franciscan Fathers began their work in Northern Hupeh. They employed for a long time to come no fully qualified doctors though they early rendered medical aid to the poor. The Fathers themselves did their best in this direction; moreover each of them employed one or two *baptizeurs* or *baptizeuses* who possessed a fair knowledge of old-style medicine and distributed gratuitously Chinese drugs to the poor. Thus they gained access to the houses and could baptize dying infants. European medicines were introduced by the Franciscan Order very late, the first being quinine distributed from the year 1880 onwards (15).

It may be added that what holds true of the Franciscan work was characteristic for a long time of the whole medical activity of the Catholic missions. Almost up to our times in most stations medical aid was given by not fully qualified personnel. Each priest renders what services he can, often including gratuitous vaccination. The ecclesiastic superiors do their best to further this work by issuing popular booklets on diagnosis and treatment (16), providing medicines and vaccine, etc. Some missions even see to it that the missionaries receive some medical training before being sent out. Dispensaries were opened in connection with practically all convents

(15) Personal information from the Revd. Father C. Checcaci.

(16) Mention may be made of the *Manuel Pratique de Robinson* and the *Robinson-Médecin* by Pol Korrigan as well as the *Petit Formulaire Médical en Français et en Chinois* by Father J. Twdry which contains numerous prescriptions of how to prepare remedies according to European formulas with Chinese ingredients.

where help to numerous patients is given by (often specially trained) sisters. Yet, though far from detracting from the value of these endeavours pursued with the zeal and self-denial characteristic of all Catholic undertakings, we must state that fully trained medical workers, who soon became the rule at most Protestant missionary stations, where medical work was done at all, remained for a long time exceptions with the Catholic missions.

With the conclusion of this chapter it may be well to cast a glance upon the medical activities of the *Russian Ecclesiastical Mission* in Peking. This work lies in a class by itself because unlike other missionaries the Russians did little to spread the Gospel, paying main attention to their own flock, the descendants of the valiant defenders of the fortress Albazin on the Amur River who were brought to Peking by Chinese soldiers in 1685. Their doctors evidently restricted their work in a similar manner but most of them made good use of their stay in China by carrying out research work. Unfortunately, due to the jealousy with which the Russian authorities guarded any information they alone might possess, only part of this valuable undertaking was ever published.

Most of the missions dispatched at regular intervals from Russia possessed a medical man on their staff. The earliest was Pulart, a graduate of the Moscow Academy who arrived with the Archimandrite Hilarion (first Mission to Peking) in 1716(17). In the same year there also arrived in Peking a British Surgeon engaged by the Russians. The story is that the Emperor K'ang Hsi wrote to the Tobolsk Governor Prince Gagarin to recommend him a good physician and also some serviceable physic for pleasure (apparently vitalizer or aphrodisiac). A British surgeon of the St. Petersburg Hospital, called Thomas Garwin in the Russian records (his real name was probably Harwin), was selected. Together with the engineer L. Langen sent by the Czar, this English doctor reached Peking in November 1716. All that we can find of his medical activity there is that he was once permitted to feel the pulse of the Emperor. By the spring of 1717 he had already left the capital(18). Dr. John Bell of Antermoney, the author of the curious work "Travels from St. Petersburg in Russia to Diverse Parts of Asia" (Glasgow, 1763) also came to Peking with a Russian embassy (Ismayloff). He arrived in November 1720, and left again in the following March.

Among the medical men connected later on with the Russian mission are Dr. Kirillov (1830-40), distinguished as a collector of plants and author of botanical papers and Dr. Alexander Tartarinov

(17) Dudgeon, *Chin. Recorder*, Vol. IV, p. 68.

(18) Dudgeon, *ibidem*, Vol. III, p. 337.

(1840-50), a great authority upon Chinese medicine(19). Among his works were:—

- (1) Chinese Art of Healing. Contrib. of the Russian Ecclesiastical Mission, Vol. II (1853).
- (2) Catalogus Medicamentorum Sinensium, St. Petersburg, 1856. Most of the drugs embodied here were identified by Horaminov in St. Petersburg.
- (3) On the Employment of Anaesthetic Means in Operations by the Chinese and Hydropathy of the Chinese, 1860.

Dr. Basilevski, who came out in 1859, wrote on the fishes in North China. The last missionary doctor, Karnievski, became in 1861 the first surgeon to the Russian Legation, a post held later on (1866-1883) by Dr. E. Bretschneider, the author of "Study and Value of Chinese Botanical Works" (20) and other important contributions on botany and geography.

(19) Dudgeon, *ibidem*, Vol. IV, p. 96.

(20) Chin. Recorder, 1870-71.

CHAPTER III

INTRODUCTION OF JENNERIAN VACCINATION AGAINST SMALLPOX IN CHINA AND ITS FURTHER PROGRESS IN THE COUNTRY

History of smallpox in China—Chinese method of variolation—Earliest attempts to introduce Jenner's method from India—Endeavours of the Russians in the North—Successful introduction of vaccination by Dr. Pearson—Jenner learns of success in China—Pearson enlists Chinese assistants, especially A. Hequa—Early difficulties—Vaccination Institute opened with aid of Hong merchants—A. Hequa publishes treatise on vaccination—Satisfactory progress first under Pearson, then under A. Hequa—A. Hequa dies, succeeded by his son—Missionary vaccine department opened at Canton—Dr. Kerr's description of the Chinese Vaccine Establishment—Work of Missionaries at and near Canton—Wong Fun reports splendid progress in Kwangtung Province—Cow-pox manufacture in Canton—Progress of vaccination in China outside Kwangtung Province.

Before dealing with the introduction of the modern method of vaccination into China it seems advisable to devote some space to a survey of the history of smallpox in the country as well as to dwell upon the method of inoculation as practised for centuries before Jenner's time.

As mentioned in the foregoing chapter, the Jesuit Cibot asserted that according to an old medical work in the College of Imperial Physicians in Peking, smallpox had been known in China for 3,000 years. Certainly the good Father was not quite discriminating in accepting this statement at face value. Dudgeon, dealing with this matter in 1871 (21) aptly said:—

We know how books are sometimes made to speak with the authority of antiquity. It needs only a comparatively late writer to make the statement of its immemorial character, or still better, to mention some dynasty, emperor or celebrated personage who was in some way connected with it, and the thing is quoted and believed in ever afterwards. The whole question of the antiquity of smallpox is very suspicious; the passages are vague and would apply to many other skin affections.

As Dudgeon feared, Cibot's statement was often repeated and China was even considered as the cradle of smallpox. Such a belief

(21) Customs Med. Rep. for Half-Year ending March 31, 1871, p. 7 & foll.

was expressed, for instance in the "History of Smallpox" by Moore who—as Dudgeon was led to think—was directly or indirectly influenced by Cibot's paper, and is ruminated in some quite modern compilations. Yet all modern authors who had access to Chinese sources are agreed that smallpox was introduced into China much later. Some (22) contemplate that it might have come in the 3rd century B.C. from Mongolia—an opinion considered "quite untenable" by Dudgeon (23). Usually it is assumed (24) that this event took place during the reign of Chien Wu while he was at war with the barbarians in Hunan or Hupeh (A.D. 49). A large portion of his soldiers including the famous hero Ma Wun succumbed to the new infection. It may be noted that according to both theories the disease would have entered China from the West—an aspect lending support to the assumption that the original home of the disease was in Western Asia, possibly not far from the Caspian Sea (21).

The first authentic description was given, according to K. C. Wong, by the alchemist Ko Hung (281-361 A.D.). In his "Handbook of Prescriptions for Emergencies" smallpox was described in the following terms:—

Recently there are persons suffering from epidemic sores which attack the head, face and trunk. In a short time they spread all over the body. The sores have the appearance of hot boils containing some white matter. While some of these pustules are drying up a fresh crop appears. Patients who recover are disfigured with purplish scars which do not fade until after a year. The people say that it was introduced in the reign of Chien Wu when that king was fighting the Huns at Nanyang. The name 'Hun pox' was given to it.

Thus Ko Hung and not Rhazes, an Arabian physician of the ninth century, should be credited with the first authentic description of smallpox (25).

Though different stories are extant as to how the time-honoured method of inoculation against smallpox was introduced into China, they all concur that this event took place between A.D. 1000 and 1100. Macgowan (22) tells that this art was first taught in the reign of Chen Tsung (A.D. 998-1022) when the great statesman Wang Tan was trying to find a means by which to save a son born in his old age from smallpox which had deprived him of his former children. An officer directed his attention to a nun living on the Omei Mountain near Tibet, who practised inoculation. She used

(22) Macgowan, *ibidem*, No. 27 (1883-84), p. 9; Thomson, *China Med. Miss Jl.*, 1887 & *National Med. Jl.*, 1918, p. 66.

(23) *Customs Med. Rep.* No. 3 (1871-72), p. 9.

(24) K. C. Wong, *Nat. Med. Jl.*, 1918, p. 94 & *China Med. Jl.*, 1919, p. 53.—See also Macgowan, *Customs Med. Rep.* No. 22 (1881), p. 46 and Thomson, *l.c.*

(25) K. C. Wong, *China Med. Jl.*, 1929, p. 1197; *Chin. Med. Jl.*, 1936, p. 177.

scabs from smallpox patients, taking in summer such which had been preserved for 15-20 days, in winter such kept for 40-50 days. These were ground into powder and some of this material was implanted into the right nostril in case of a boy, into the left of a girl. She successfully treated the Minister's son and, refusing a fee, admonished Wang Tan in lofty terms to serve the State faithfully in order to reward her.

K. C. Wong relates a similar legend (26) according to which Wang Tan appealed not to a nun but to a Szechwanese living at Ngo mountain. He adds the belief that the method came via the trade routes from India.

The first legend quoted by us alludes already to some of the ten rules laid down for practising variolation (27). According to these, spring and autumn were considered as favourable seasons and great care was taken to choose a lucky day—a superstition which gave considerable leeway to priests and fortune tellers. Among the different methods used the following deserve mention (28):—

- (1) Smallpox scabs are rubbed down with water (or a native drug—29), and a pledget of cotton impregnated with this matter is inserted into the child's nose. (Shui Miao—水苗—of the "Golden Mirror of Medicine" (醫宗金鑑).
- (2) Lymph is used in a similar manner. (Tou Chiang—痘漿—of the "Golden Mirror").
(This procedure was condemned by many practitioners as likely to affect the child from whom the lymph was taken. The parents also resented interference with the pustules(29).
- (3) The powdered scabs are put into the end of a silver tube which is about six or seven inches long and curved at the end. With the aid of this the powder is blown into the nose of the child.
(This "dry inoculation" or Han Miao—旱苗—of the "Golden Mirror" was considered less effective though more convenient).
- (4) The undergarment of a child with smallpox is taken off and put on a healthy child for two or three days. (Tou Yi—痘衣—of the "Golden Mirror").
- (5) A wet-nurse is employed who has just nursed a child with smallpox.
(This is the most expensive procedure and can be afforded by rich families only—Manson)(30).
- (6) Lymph or crust rubbed down with water is introduced into a sore.
(As we shall see, some old-style vaccinators made scarifications on the arm to introduce this material in much the same way as the modern method is practised).

Great care was taken to work with material from mild cases so as to avoid too severe a reaction. Nevertheless serious infection

(26) Ibidem, 1929, p. 1204.

(27) English versions of these are given by Lockhart, *The Medical Missionary in China*, 1861, p. 238 and by Thomson, l.c.

(28) Dyer Ball, *Things Chinese*; Thomson, *China Med. Miss. Jl.*, 1893, p. 1; K. C. Wong, *China Med. Jl.*, 1919, p. 54.

(29) M. Mackenzie, *ibidem*, 1909, p. 20.

(30) *Customs Med. Rep. No. 18* (1879), p. 59.

sometimes resulted, endangering not only the inoculated but also their contacts. In fact this old-style procedure presupposes the continued existence of smallpox in order to be practicable and there can be no two opinions as to the absolute superiority of Jenner's innocuous method. Yet, though by no means holding a brief for the old variolation, one cannot help feeling that those utterly condemning or ridiculing it lack somewhat in historical perspective. It stands to reason that the method, in order to remain in use for centuries, must have done some good. In fact Dyer Ball records that by this means smallpox mortality in Shansi fell from 20-30 and even 50-60 per cent. to one per cent. Nor should it be forgotten that in Europe as well "it had wellnigh attained the status of a modern preventive inoculation" on account of its relative harmlessness. It was not before the year 1840 that variolation was declared a felony in England by Act of Parliament (31).

Since the Chinese were familiar with the feasibility of small-pox prevention, no better method than Jenner's inoculation could have been selected in order to gain a permanent foothold for western medical practice in China early in the 19th century. Yet it was not chosen deliberately but reached the country eventually in its spectacular progress throughout the world. The earliest attempts in this direction date back to June, 1803, when a dispatch was received from the Governor-General in Council of the East India Company in which he intimated his wish to see this method, which had come into general use in the British possessions in India, applied in China as well. The Governor-General therefore advised the Committee to consult the principal mandarins. Meanwhile, a supply of vaccine, sent by the Bombay Governor on August 8, was actually received in October, 1803. With the aid of the Hong merchants it was tried upon a number of healthy Chinese children but without success, "the virus having from the length of passage, been deprived of its virtue" (32).

It can thus be seen that the humane endeavours of the East India Company did not lead to any immediate result. The same holds true in regard to attempts made soon afterwards in the North: Dr. Rehmann, physician to the Russian embassy in China, informs his father, physician to the Prince of Fürstenberg, in a letter dated from Kiakhta on the frontiers of China, October 14, 1805 (33), that he has vaccinated a great number of Mongolian children and assures

(31) Garrison, *l.c.* p. 405.

(32) Morse, *The Chronicles of the East India Company trading to China 1635-1834*, Vol. II, p. 410.

(33) Published in the *Chinese Repository*, Vol. XIII (1844), p. 280.

that in consequence of the measures he has employed, vaccination is now propagated from Jekutzh (?) as far as Jakutsk and Ochotzk, and consequently from England to the remotest extremity of the northern part of the globe.

Yet it seems that the method was not then introduced into China proper. As far as we know it was not before 1820 that vaccination was practised by the Russian doctors in Peking and then solely among the Albasines who had by then become Chinese subjects (Dyer Ball).

Fortunately vaccination reached Macao by a third route and a man was present there who was capable of making it of everlasting avail to the Chinese people. This was Alexander Pearson, one of the great surgeons to the East India Company in China and "an attentive and sympathising friend, as well as skilful physician" (34).

Since different versions were given as to how vaccination was propagated from Macao, the whole credit being sometimes given to the Spanish (35), we deem it well to quote Pearson's own words. In his first "Report submitted to the Board of the National Vaccine Establishment" (Canton, February 18, 1816) (36) he wrote:—

In the spring of 1805.....the vaccine was brought by Mr. Hewit, a Portuguese subject and a merchant of Macao, in his vessel(37), upon live subjects from Manila—His Catholic Majesty having had it conveyed by suitable means, and under the care of professional men across the South American continent to his settlement in the Philippine Islands.

I observe that one of them (Dr. F. X. Balmis) states himself to have introduced the practice in this country; but before his arrival in China, it had been, quite extensively conducted by the Portuguese practitioners at Macao, as well as by myself among the inhabitants there and the Chinese, and the accompanying tract drawn up by me, had been translated by Sir George Staunton into Chinese, and published several months previous to his arrival. As I deemed the inoculation on any subjects connected with the foreign society, or with the Settlement of Macao, nugatory towards an establishment of the practice in China, it was from the beginning conducted, first at some expense, by inoculations at stated periods among the natives, and of them necessarily the poorest classes, who dwelt crowded together in boats or otherwise.....

Nothing has to be added to this plain and straightforward tale except a few further details. The translation of Pearson's pamphlet was undertaken by Sir George Thomas Staunton, the son of the historian of the Macartney Embassy (in which he himself had taken part as page) and President of the Company's Select Committee with

(34) Ljungstedt, *A Brief Account of an Ophthalmic Institution, etc.*, Canton, 1834.

(35) See e.g. R. R. Maria, *China: Political, Commercial and Social*, Vol. I, p. 380; Couling, *Encyclopaedia Sinica*, pp. 524, 526. Certainly, however, due credit must be given to the Spanish for having introduced the method into the Philippines. This epic achievement is well described by Dr. J. P. Bantug (*Rivista Filipina de Medicina y Farmacia*, Vol. XVIII (1927), p. 206).

(36) Republished in the *Chinese Repository*, Vol. II, p. 36 & foll; Thomson, *China Med. Miss. J.*, 1887, p. 93.

the aid of a Chinese medical practitioner and was sponsored by the Hong merchant "Gnewqua"

it being indispensable that Books printed in China should appear the production or be sanctioned by some Native holding a public situation(37).

Edward Jenner in England soon learnt of the success attained in China. In a little tract called "Results of Vaccination" (38), is a letter from one John Barrow (presumably the former surgeon of the Macartney Embassy), dated June 9, 1806, who transmits to Jenner a copy of his friend Sir George Staunton's treatise and informs him of the results achieved, adding that "thus the English at length as well as the other Europeans have established their claim (which though last is not least) on the gratitude of the Chinese." The great discoverer of vaccination (Jenner) was evidently much impressed because according to an entry in Farington's diary (39), he remarked to the latter that the Chinese seemed much readier to resort to vaccination than the English people nearer home.

Copies of this pamphlet with explanatory letters were sent in August, 1806, to the Viceroy and the *Hoppo* (Head of Chinese Customs), but—the relations between these high officials and the foreigners being most uncomfortable at the time—they were not presented (37). Official recognition was apparently obtained in 1811 only when a copy of the pamphlet handed over by Sir G. Staunton to the new Viceroy 'was very well received' (40).

It can be gathered from Pearson's report that the first persons treated at his own expense were poor people. Soon, however, the method "sprang into favour amongst the Chinese, who though very conservative in their feelings, when once convinced of the benefit of any new method, take it up very readily and great numbers were brought to be operated on during the period of the raging smallpox in the course of the winter and spring months of 1805-1806."

Pearson now needed more help than the casual attention given him by his compatriots in the factory, and from 1806 onwards he employed Chinese assistants, recruited from the employees of the factory. The most prominent of these was Yao Hochun, called A. Hequa by the foreigners and nick-named Dr. Longhead on account of the extraordinary length of his head. He was a native of the Nam-hoi district and had formerly been purveyor to the Company.

(37) This was aptly called "Esperanza" (Hope)—Morse, l.c., Vol. III, p. 16.

(38) Quoted by Wong Fun, Customs Med. Rep. No. 15 (1877-78), p. 14.

(39) Quoted by Brayton Barff, North China Herald, 1926.

(40) Morse, l.c., Vol. III, p. 170.

In the course of twelve months thousands had been vaccinated (41), the Chinese assistants of Dr. Pearson working both locally under his immediate supervision and in the country districts. However, as soon as smallpox ceased to be epidemic, "the evil and the remedy against it were equally forgotten" and many difficulties were met with. The parents of the vaccinated children frequently failed to bring them back for inspection. This rendered "it necessary to guard against the chance of failure by an increased number of insertions, generally four" (42). Even when the children were again submitted the parents resented the taking of lymph from the pustules. Finally there was a wide-spread prejudice against inoculations in summer and autumn—a *sine qua non* in those days when only vaccination from arm to arm was practised, necessitating regular vaccination the whole year round. Twice it became necessary to reintroduce virus from the Philippines, and twice it was found alive in the rural areas though dead in Canton. From a passage in Morse's compilation(43) it can be gathered that even India was appealed to: In May, 1813, the surgeon of the factory, having procured from Manila potent virus, proposed to write to Bengal and Madras withdrawing the request of the Committee that a supply of the virus be sent on the living subject.

In the same month, however, the Secretary to the Medical Board at Calcutta wrote on the subject, that the reintroduction of the virus through children seemed the most certain, but this was out of the question, and he suggested that the Company's agents in Java and in Amboyna be instructed to send flasks of the matter, in the hope that it might be effective after so short a voyage.

Evidently no action was taken in this direction because later on reference is made to Madras natives sent "for the purpose of reviving the Cow Pox in China" and shipped back to Penang on account of the cold.

However, all these difficulties were gradually overcome. In 1815 the principal Hong merchants (44) established a fund for the

(41) An interesting point is that according to an account (1806) of Captain Samuel Turner who went with a British Embassy to the Court of the Teshoo Lama in Tibet, "the present Rajah of Tibet was inoculated, with some of his followers, when in China with the late Teshoo Lama." It might be that they were subjected to the old-fashioned variolation and not to modern vaccination, but evidently Turner has the latter method in mind, as he speaks in the same context of the prospects of introducing it into Tibet.

(42) This evidently led to the so-called "Chinese Method" of vaccination with four long incisions which seemed so peculiar to later observers of the work of the Chinese vaccinators.

(43) L.c., Vol. III, p. 204.

(44) These merchants, forming a commercial corporation or hong had the exclusive privilege of dealing with the foreigners.

gratuitous vaccination of the poor at all times, offering a small premium to those who brought their children for that purpose. A dispensary was opened in the "Consoo House" or Public Hall of the Hong Merchants, in Hong Street, Canton, where from fifteen to forty children were vaccinated every ninth day by a Chinese vaccinator, Dr. Pearson merely inspecting the pustules from which the lymph was taken,

and this simply to put an end to a malicious rumour that the Chinese vaccinators had not been circumspect in the choice of the matter they used.

As mentioned already, Dr. Pearson made his first report to this "National Vaccine Establishment" in 1816; it was translated into Chinese in 1820.

A proof of the popularity which vaccination had obtained about this time is that in 1817 a native tract on vaccination was published at Canton, in which part of Pearson's tract was incorporated. Here "the discovery of vaccination is ascribed to a Western foreign doctor named Chan-na (Jenner) and the story of its having been brought by ship from Manila to Macao, which had children on board for the purpose of keeping up the supply of lymph, is related" (45).

In 1818 Yau Yamteng, Yau Hochun's son and successor, began to work in the dispensary. In the same year the Senior Yau published a treatise of 100 pages on vaccination. This work is a curious mixture of sound advice and abstruse theories. A short account is given as to how vaccination was discovered in the West and the practice of variolation is condemned. Minute details are given as to how the operation should be performed; two small pockets in each arm are advocated in the case of infants, 6 inoculations—3 in each arm—in the case of older children. A curious piece of advice is that in males the left arm should be vaccinated first, in females the right. Vaccinators are warned to keep the danger of transmitting leprosy in mind. A perfect vesicle is carefully described and a strict diet scheme is given. The vaccinated children may partake of lean pork, roast duck and some other articles, while other things like beef, fowl, etc. are prohibited. An elaborate theory as to how the vaccination acts is added.

Simultaneously with this volume, three others, containing odes in appreciation of vaccination, were published. The most remarkable of these was written by Yuen Yuen, Governor General of the Liang Kwang Provinces 1817-26:

The poison of opium has been brought to China, and although the most stringent means are used to prevent it, they do not succeed. But this foreign art of vaccination may be carried into all the provinces, for it will truly prolong life.

(45) Dudgeon, Customs Med. Rep. for Half-Year end. March 31, 1871, p. 8.

In the autumn of 1820, Monsieur Despiana, Surgeon in the service of the King of Cochin-China, arrived bearing a letter from the French Minister there, with a request to introduce the art into that country. He departed in February, 1821, "having succeeded in his object."

Soon afterwards (March, 1821) Pearson's second report was issued. Here it was again recommended to make four insertions; if possible two pustules should be left to dry untouched. Satisfactory progress is recorded as far as Canton and Kwangtung Province are concerned. Smallpox had in that and in the preceding season been unusually severe and fatal. Investigations were therefore instituted into the efficacy of the method employed, the more so, as certain complaints had been made.

These divided themselves into two heads: viz., vaccination with spurious matter, or imperfectly or unskillfully conducted; and the other, the following of the vaccination by a modified smallpox.

Results were quite reassuring:

Under the first heading none presented themselves who had been vaccinated under inspection, or at the Canton Institute; under the second heading the number was few. The general reliance of the Chinese was not shaken.

Attempts to introduce the art into the neighbouring Kiangsi Province were unsuccessful at first, mainly on account of the priesthood whose interests were vested in the old method of variolation and whose deities had been resorted to in times of visitation by smallpox. Pearson adds that

the breaking out of scarlet fever afforded plausible ground of crimination against a practice which it was said 'retained the poison in the system, to appear at a future time in still worse shapes' (46).

Two further reports were made between 1821 and 1833 (?) which are no more extant. Dyer Ball, who has evidently seen them, states "that the practice extended itself largely amongst all sorts and conditions of Chinese in the Canton province. It was also conveyed to the Kiangsi, Kiangnan and Fukien provinces and even reached Peking, but was lost there."

Pearson, who left China in autumn 1832, seems in his final report to have highly commended Chinese vaccinators, particularly A. Hequa, whom he called "a man remarkably qualified for the business, by his accuracy of judgement, method and perseverance" adding that

he had been encouraged in his laudable exertions by the favourable opinion of his countrymen and by marks of distinction or consideration which had been conferred upon him by the higher functionaries of the local government.

(46) This early testimony as to the existence of scarlatina in China is of considerable interest but must be regarded with scepticism.

A fitting tribute to Pearson himself is paid in the Report of the Medical Missionary Society, published at Macao in 1843, where it is put on record that his name "will ever be associated with those who have proved benefactors to mankind."

This 1843 report bears witness to the continued existence of the Vaccine Department under Yau Hochun. It was by this time apparently under government supervision for Dr. Hobson, describing the Chinese Leper hospital at Canton in his 1841-42 Macao Report, says that

to prevent any children being inoculated with this dreadful malady (viz. leprosy), the government orders two policemen from the lazar house to examine all the children who present themselves for vaccination to Hequa.... If there is any suspicion of leprosy the children cannot be vaccinated.

Yau Hochun died in 1850 after a long and honourable career, during which he had vaccinated more than a million people. When near death he committed 'with many earnest charges' the art of vaccination to Yau Yamteng, saying:—

You, my eldest son, have received my instructions for more than thirty years—hereafter it devolves upon you to disseminate abroad this benevolent art, and never permit it to be lost(47).

Some difficulties must have been met with immediately after Yau Hochun's death, because Yau Yamteng is stated(47) to have reopened the dispensary in the year 1852 by the favour of the old Hong merchants Howqua, Pwantinqua and others.

While the work seems to have been continuously carried on from this time onward, the missionaries evidently lost track of it. One of them, Dr. William Lobscheid of the Rhenish Mission, arrived in China in 1848 (48), published in 1855 in Chinese a modification of Pearson's tract under the title "Treatise on the New English Method of Vaccination." A vaccine department was opened in connection with the Canton Missionary Hospital in 1859, not only to afford weekly gratuitous vaccination to the poor, but specially to supply genuine virus. Commenting upon this new enterprise (49), Kerr says that without the aid of a government or public institution vaccination is neglected by the multitudes and that those who practice the art are unable to preserve the virus, having to depend upon fresh supplies brought from England. He therefore prepared and published in the same year a new pamphlet on vaccination

in which directions are given for preserving the Scab and vaccinating from it. This is one of the easiest modes of preserving the virus in a warm climate, but it is not known to the Chinese.

(47) Vaccination Circular, published in the Report of the Medical Miss. Society for 1860.

(48) Thomson, China Med. Miss. Journal, 1887, p. 45.

(49) Rep. of the Med. Miss. Soc. for 1858 and 1859, Macao, 1860.

Results were evidently not quite up to expectation because Kerr tells in his 1860 Report of having received in spring some fresh lymph from Dr. Murray, Colonial Surgeon at Hongkong, from which 700 children were vaccinated. A small sum was required in each case as security that the child would be returned for inspection on the eighth day. Then this was paid back and if lymph was taken, a small additional sum was issued. In this manner a large supply of lymph was obtained which was preserved in glass tubes and distributed to the treaty ports and even to Siam and Japan. During the summer, however, people were not inclined to have their children vaccinated and when in autumn resort was taken to the lymph stored in spring, it was found inactive. Dr. Kerr, who had become aware of the existence of the Chinese Vaccination Establishment, applied to this for lymph and gave at the same time an interesting account of the Chinese practice of the art:

The institute, situated in the western suburbs not far from the London Missionary Society's hospital, was still presided over by Yau Yamteng. In his office he had a portrait of Dr. Pearson, engraved from an original painting by Chinnery, and by the side of it an account in Chinese of the introduction of vaccination by Dr. Pearson. A scroll, bearing in large characters Yuen Yuen's ode, was hung up as well.

Yau Yamteng's mode of operating was to make four or five transversal incisions, half an inch long, into which the virus was transferred directly from a mature pustule with the aid of the lancet. Kerr adds that "there is every evidence that the vaccination is genuine and effectual."

The difficulty of keeping up a supply of lymph during the summer and winter months was great, but the Chinese practitioners hired a sufficient number of persons to submit their children to vaccination during these seasons. Moreover,

there are now so many persons devoted exclusively to the business, and interested in the preservation of the virus, that there is no danger of its ever being lost. Several persons have made fortunes from the practice, and those first engaged in it have obtained an enviable fame among their countrymen as great benefactors of the race.

Yau Yamteng kept a circular for distribution where a history of the introduction of Jenner's method into China and a survey of Yau Hochun's activity was given. This concluded thus:—

The virus which I use is derived directly from that brought by the Hong merchants, and before it is used, a man skilled in detecting leprosy examines the child, and thus all danger is avoided. Those who wish to request me to vaccinate will please come to my house in the West end of 12th street. It is necessary to inquire carefully for the right place to avoid deception, because of late my name has been basely counterfeited. So will my most ardent desires be fulfilled.

Kerr states as a result of his enquiries that "the virtues of vaccination are fully known and appreciated in Canton and its vicinity, and perhaps throughout this Province."

It can be gathered from the subsequent reports of the Medical Missionary Society that, while vaccination campaigns were undertaken each spring and inoculations performed as well at a distance with the aid of pupils and in the outstations, it was often necessary to obtain fresh lymph supplies from places like Hongkong and Calcutta. Early in 1861 operations were started in the Shiu-hing Dispensary. In spring, 1863, a vaccine station was kept open at Im-po, midway between Canton and Fat-shan. According to the 1864 Report such an institute was opened in the eastern suburbs of Canton under the patronage of a wealthy Chinese where one of the pupils of the Missionary Hospital operated. A former pupil engaged in similar work at Tai-leung (Shun-tak district), supported by an association of rich men. Vaccine was supplied to these and other Chinese institutes by Kerr's hospital. In 1866 it is stated that this

is the only institution where a supply of lymph is kept on hand for the purpose of supplying native practitioners. Many Chinese have also been taught to preserve the lymph in capillary glass tubes in which it can be transmitted to distant parts thus enabling them to dispense with the uncertain and troublesome method in common use, of taking a child that has been vaccinated to the place where children are to undergo the operation.

The 1867 Report states that instruction was given and lymph supplied to two Chinese vaccinators who endeavoured to replace the old-style method by Jenner's art in the south-west districts of Kwangtung Province. Similar efforts were recorded in 1868 as well, while during this and subsequent years gratuitous vaccinations were continued at both the Canton Hospital and the outstations of the Medical Missionary Society.

Dr. Wong Fun gave in 1878 such an interesting and satisfactory survey (38) that it seems well to quote it in full:—

.....Of late, perhaps within the last 15 years.....vaccination..... has obtained extension to all classes and conditions of men, from the highest to the lowest, whether living on land or on water, so that at present it may be estimated that at least 95 per cent of the children of the city receive the benefits of vaccination. The general age at which children are vaccinated is about the second year, and the earliest about the fourth or fifth month.

There are in the city many men engaged in the practice, some of whom receive pay from benevolent individuals to open dispensaries for free attendance on the poor on stated days. In the country vaccination has made great progress in the confidence of the people, and professional men are found in villages, either practising on their own account, or hired by the gentry for the purpose. The two most noted vaccinators of the city are Yauhee and Tan Yihsing. The grandfather of the former was instructed in the art by Dr. Pearson in 1806, and carried it on with such success and

became so widely known, that his family receives marks of recognition from the Government in the shape of some official title, and also I believe a grant of Tls. 100 per annum for the preservation of lymph. Tan Yihsing has also a large practice, some say on account of the confidence placed in him as one skilful in the diagnosis of leprosy, and likely to be circumspect in the selection of lymph.

It was always the custom to vaccinate direct from the arm, but of late years many Chinese, including the individuals above mentioned, have been taught by Dr. Kerr to preserve lymph in glass tubes. Chinese mothers strongly object to having lymph taken from their children, under the idea that it weakens their constitution, and would not part with it but for money, so that vaccinators have to secure their supply of lymph by paying children successfully vaccinated to come to their houses. When a doctor is called to a family to perform vaccination he takes a child with him to furnish the vaccine, for which he generally gets 50 cents or \$1 as a fee, and the child 25 cents for the lymph. Poor people may be vaccinated for 10 or 25 cents.

A new vaccination station was established in Canton in 1881 by Chang Shu-cheng, then Viceroy of the two Kwang Provinces: "Desiring to give some employment to a number of petty expectant officials who had nothing to do, and with the belief that some benefit might accrue to the people, he had 40 of these men taught vaccination, and then sent them into the 72 districts of Kwangtung, at the same time giving instructions that their salaries were to be paid by the local officials of the districts they visited" (50). It would seem that this scheme was not very successful.

As a conclusion to this survey of the early history of vaccination in Canton, it may be remarked that this city may not only claim the honour of having been the first in China where Jenner's method was widely practised, but also of having harboured the first genuinely Chinese institute for cow-pox manufacture.

This work was started under the guidance of the local Government in 1912 (51) and is continued up to the present as a Municipal enterprise (52). Besides there exists a small private institute under Dr. Lai Kai-hong (52).

It is with great misgivings that we attempt now to deal with the early progress of vaccination in China outside the Kwangtung and immediately adjacent provinces. For it is impossible to do full justice to this vast subject. Each western-trained medical practitioner, each dispensary and hospital conducted on modern lines, attempted, as soon as they opened their practice, to propagate the method. Non-medical persons and organisations took a laudable part in this as well; mention must be made, for instance, of the endeavours of the Roman Catholic priests and especially Sisters. Even if it were possible to collect all data extant in this regard,

(50) Aldridge, Customs Med. Rep. No. 25 (1882-83), p. 14.

(51) China Med. J., 1912, p. 208.

(52) Dr. Y. M. Kwan, Report on Medical & Health Conditions in Canton, 1930 (Rep. Nat. Quar. Service, Series II, 1931).

the information thus procured would be incomplete because no doubt this branch of the work was often recorded only when unusual success or unusual difficulties were met with. As far as the Chinese vaccinators are concerned the example of Canton shows how much their activity was apt to be overlooked by modern-trained observers. In spite of this it seems advisable to record suitable data on hand.

In the foregoing pages it was noted that Russian doctors practised modern vaccination in Peking as early as 1820, restricting, however, their attention to the descendants of the defenders of Albazin who, but for their orthodox faith, were hardly distinguishable from the pure Chinese among whom they lived. Allusion was also made to an early and futile attempt to bring the art from Canton to Peking soon after 1821. It is on record that A. Hequa himself went to the capital in order to instal the work, but we are not sure whether he did so when the first endeavour was made or when vaccination was successfully introduced from Canton in 1828 through the good services of the Prefect Tseng who had been formerly a mandarin in the South (21). It was at first proposed to have a relay of boys on the road from Canton to Peking but finally crusts were sent which, soaked in mother's milk after their arrival, proved virulent (Dyer Ball—28). In order to propagate the method, the Chinese tract on vaccination, originally published in 1817 at Canton, was reprinted in Peking. Through the initiative of Tseng, money was subscribed to provide heated quarters and other conveniences for those undergoing vaccination in winter—benefits which ceased when this great patron died. Possibly the practice fell into comparative disuse because in 1847 Pwantinqua sent at his cost Yau Yamteng to the capital to disseminate vaccination there.

When in 1861 the pioneer missionary doctor Lockhart started vaccination at the newly-founded London Missionary Hospital, many Chinese vaccinators at once posted advertisements trying to attract the clients. Lockhart was induced to believe that they all obtained the virus by stealth from the missionary hospital, sending a child to be vaccinated there but not allowing it to return for inspection. He offered to teach some of the vaccinators how to obtain good lymph but met with no success (53).

Presumably Dr. Lockhart, who had been just a short time in Peking, had not yet had any opportunity to get acquainted with the better class establishments. For an 1864 report quoted by Dyer Ball testified to the existence of three well conducted Chinese vaccine institutes, one of which possessed a branch in Tientsin. Dudgeon mentioned in the following year (1865) four such undertakings, two in the North City and two in the Southern part of the city.

The largest, which performed 1,860 vaccinations throughout the year operated with vaccine furnished by the missionary hospital(53).

Much information, in regard not only to Peking but to the Chinese method of inoculation in general, is contained in Dudgeon's Customs Report for 1871(21). He speaks of several vaccination establishments, all, however, conducted as private undertakings. He goes on to say that

although in one sense vaccination is performed gratuitously, yet it is understood that small fees are accepted, and there is a sort of custom which looks well for the philanthropy of the vaccinator, by which the parents of the child to be vaccinated contribute a small sum to the children from whom the lymph has been taken, which of course falls to the establishment.

Since, however, direct vaccination from arm to arm was generally preferred and consequently children had to be hired to keep up the supply during winter, the institutes were well entitled to this moderate recompensation.

Dudgeon opines that the total number of vaccinations performed in those days seldom exceeded 3,000 per annum and that smallpox was therefore still rampant.

The 1873 Customs Medical Report(54) dwells again upon the difficulty of keeping the virus alive during the cold season. This was overcome by one vaccinator only, of long and now semi-official standing, who hired during the winter poor children and let them live in his establishment. His institute had branch offices not only in Tientsin but also in Taiyuanfu in Shansi.

Smallpox frequently prevailed in those days at Peking during the winter and seems to have been specially rampant not only there but in East Asia in general in 1874-1875(55). The death of the Emperor of China (T'ung-Chi 同治), barely 19 years of age, was ascribed to this disease or as the Court Gazette put it "to the enjoyment of the felicity of the heavenly flowers." This event probably gave some impetus to vaccination. At least it is on record that the new child Emperor was vaccinated and that also the Emperor and Empress of Japan had the operation performed when they became aware of the death of the "Son of Heaven."

When trying to supplement these early data with a survey of the present situation at Peking mention must be made first of an attempt to make vaccination compulsory at Peking: In 1916 the Metropolitan Police issued orders to the Government hospitals to vaccinate patients and others and the same was intimated to

(53) Cormack, China Med. Jl., 1926, p. 517.

(54) No. 6 (April-Sept. 1873), p. 11.

(55) Dudgeon, Customs Med. Rep. No. 9 (1874-75), p. 34.

the private medical practitioners as well(56). This laudable scheme could not be carried out. Korns, who gave in 1921 a very interesting survey on the Incidence of Vaccination and Smallpox in North China(57), states expressly that "there is no governmental insistence on universal vaccination, but the Chinese, having learned the wisdom of the practice, urge it on their relatives and neighbours." This author also testifies that the prevailing practice is still that from arm to arm, apparently the only precaution taken being to rule out leprosy in the donor. Vaccine is stored after the spring campaign but how far this remains potent is unknown. Revaccination is still very rarely practised. Statistics were collected by Korns upon 3,020 medical out-patients, practically all of whom were males and over 15 years of age, while 80 per cent came from Chihli and adjacent provinces. The conclusion reached was that

neither single nor multiple vaccination affords so high a degree of protection as is expected in western countries. This may be due in part to faulty methods of vaccinating but in all probability is chiefly due to the repeated and severe exposure.

There is no doubt that conditions have been much improved during the past few years. On one hand we have to point to the establishment of the Central Epidemic Prevention Bureau in Peking in 1919, the excellent and cheap vaccine of which is coming more and more into general use. Gratuitous vaccination and suitable propaganda work are carried out by the Health Demonstration Center, established in 1925.

An early attempt to establish the art of vaccination in the Loo-choo Islands was undertaken by the first medical missionary Dr. Peter Parker in 1837 during an expedition to Japan (the object of which was to repatriate some ship-wrecked Japanese)(58).

Vaccination became available for the Chinese population in Hongkong as soon as the Missionary Hospital there was opened (1843). Dr. Hobson remarks in a report dated June, 1844(59) that several children were vaccinated and that he hopes to keep the virus permanently active. It would seem, however, that here as elsewhere in China it was not easy to carry over from season to season so that resort had to be taken to supplies from outside. In 1859, for instance, the Colonial Surgeon received vaccine from Saigon, Manila, Singapore and Edinburgh; the last mentioned parcel alone was potent(60). With its aid vaccination was performed

(56) *China Med. J.*, 1916, p. 226.

(57) *Ibidem*, 1921, p. 561.

(58) Thomson, *Chinese Recorder*, Vol. XIX, p. 231.

(59) *Chinese Repository*, Vol. XIII (1844), pp. 369-382.

(60) We are indebted for this and most of the following information re Hongkong to Drs. Heanley and Wellington.

and supplies sent to Canton and Whampoa. When dealing with Canton it was mentioned that the Colonial Surgeons helped in a similar way in subsequent years as well.

The work at Hongkong itself was carried on not only by the Missionary Hospital but also by other institutions, notably the Tung Wah Hospital, opened in 1872. This establishment provided for gratuitous vaccination not only in the City of Victoria but also in the outlying villages of the Colony, to which vaccinators were dispatched at fixed periods(61).

In spring, 1892, an institute for the preparation of calf lymph was opened in the Colony; it not only provided for the local needs but sent its products to Canton and other Chinese ports. The duties of this establishment were taken over in 1905 by the newly-opened Bacteriological Institute, and the old plant was closed.

Jenner's vaccination was introduced into Shanghai by Dr. Lockhart who opened a hospital in this city in 1844. This pioneer stated in the Report of the Medical Missionary Society Hospital at Shanghai for the period May 1, 1844—June 30, 1845(62) that since the establishment of the hospital repeated endeavours were made with lymph received from the Hongkong Hospital, Mr. A. Anderson of Macao and one Indian sample from Dr. Maxwell, in charge of the Madras troops at Chusan. These all failed but a second lot sent from Macao proved successful and was used upon a limited number of children both at the hospital and in the Chinese city. The hope is expressed that the modern method will soon supersede old-style variolation administered to a majority of the Chinese children. To bring about this result, Pearson's pamphlet in Sir George Staunton's translation was republished with corrections and some slight additions and distributed all over the district.

The difficulties besetting the work in these early days are again illustrated by the 1846-47 Report(63), when no spring campaign could be undertaken as the supplies received both from Canton and from England proved non-potent. Not before September, 1847, was good vaccine received from Hongkong. The 1850 Report mentions that some vaccination was done but that the old-style method was still in greater vogue(64).

Soon after 1861—the exact date could not be ascertained—a vaccination institute was opened in the Temple Gardens, Chinese

(61) Report of Commission on the Tung Wah Hospital (1896), reprinted 1929, p. 7.

(62) Chinese Repos., Vol. XV (1846), p. 281 and Lockhart, The Med. Missionary in China, 1861, p. 237.

(63) Chinese Repos., Vol. XVII, p. 201.

(64) 4th Report of the Chinese Hosp., Shanghai, Chin. Repos., Vol. XX (1851), p. 152.

city of Shanghai, through the initiative of Ying Taotai and put under the care of a Chinese assistant of the missionary hospital(65). A constantly increasing number of children was submitted to this institution, yet variolation continued to be practised. As Jamieson put it in his 1871 Report(65)

the Chinese do not show any active resistance to vaccination. But they are accustomed to inoculation, and so far as I can ascertain, confluent smallpox so seldom follows the usual operation that there is no very strong inducement to change the system. In other words they would as soon have their children vaccinated as not, but they do not much care.

To improve this state of affairs the foreign consuls brought pressure to bear upon the Magistrate, and induced him to issue in February, 1870, a proclamation, forbidding the old-style practice within the foreign settlements. Jamieson, a clear-thinking and independent observer, admits that this order, "from want of means to enforce it, either has already proved or must eventually prove a dead letter."

As a further and certainly more adequate step to propagate the modern method, the Municipal Council of the International Settlement opened in September, 1870, a vaccination establishment in the Maloo. Suitable propaganda was carried out with the aid of handbills and posters and by the end of February, 1871, the institute had become so well known that during the two succeeding months 180 children were vaccinated; then—the smallpox season having closed—the attendance fell off again. This well-managed establishment was by then already or soon afterwards housed in a room of the Gutzlaff Hospital which received for this service a yearly grant of \$150 from the Municipal Council(66).

During winter 1871-72 both this Municipal institute in Ningpo Road and the Chinese depôt continued to work diligently and—although variolation was still practised—it was hoped that this activity "must have in process of time, if it has not already, a marked influence upon the propagation and spread of smallpox within the settlements"(67).

Though the attendance at both dispensaries continued to become better month by month, Jamieson was less optimistic in his next report(68), considering that "the impression they make upon the vast number of children demanding protection is necessarily very slight." He was later in favour of enforcing the Taotai's manifesto against variolation as much as possible.

(65) Shanghai Municipal Report for 1871, Appendix A, p. 19; Jamieson, Customs Med. Rep. No. 2 (1871), p. 35; China Med. Miss. J., 1893, p. 114.

(66) Customs Med. Rep. No. 15 (1877-78), p. 6.

(67) Jamieson, Customs Med. Rep. No. 3 (1871-72), p. 82.

(68) Ibidem, No. 4 (1872), p. 100.

In 1874 there existed in addition to the Dispensary in Ningpo Road, a country branch in the neighbourhood of Pao-shan where it was possible to collect lymph to be used in other localities(69).

Smallpox was quite rampant in Shanghai during the winter 1874-75, two foreign cases being reported besides numerous Chinese ones(70). Partly in consequence of this and partly on account of the Emperor's death the dispensaries were well attended early in 1875. This favourable state of affairs appears to have obtained in 1876 as well, when 4,000 vaccinations were performed in the Chinese dispensary alone by Hwang Chen-foo, house-surgeon of the missionary hospital(71). An important change made in this year was that the Municipal grant was withdrawn from the Gutzlaff Hospital and the station removed to the Shantung Road Hospital, to which a considerable subsidy was accorded in consideration of the service to be performed. The Gutzlaff Hospital was therefore under the necessity to demand a small fee (5 cents) for each child to be vaccinated, except in cases of evident poverty. Nevertheless it was well attended during 1877 while the work of the new Municipal and the Chinese dispensaries progressed favourably. Thus nearly 7,000 children were treated during the year(66).

Commenting upon the successful work in 1878(72) Jamieson states that

whatever prejudices the Chinese may once have had are no doubt melting away, but I am informed that a serious objection to the vaccination of girls lies in the fact that without a few marks of evidence of having passed through smallpox, a marriageable maiden is wanting in one of her chief qualifications, natives in search of wives not having as yet learned to accept the vaccination scar as a promise of future immunity.

In 1879 almost 7,000 inoculations were done by the two foreign hospitals alone; in addition the Gutzlaff Hospital distributed about 150 tubes for use in the country(73). During the following season (1880) the Anglo-American and the French Dispensaries participated in the work and the record figure of 5,414 vaccinations was claimed by the Shantung Road Hospital. Jamieson(74) wonders whether this includes the inoculations made at the Municipal and the Chinese dispensaries or not. Moreover, to judge from his experiences in the Gutzlaff Hospital, the figures of verified vaccinations alone are reliable. There,

(69) Municipal Health Report for 1874, p. 92.

(70) Jamieson, Customs Med. Rep. No. 9 (1874-75), p. 7.

(71) Chinese Recorder, Vol. VIII (1877), p. 359.

(72) Customs Med. Rep. No. 17 (1878-79), p. 18.

(73) Ibidem, No. 19 (1879-80), p. 19.

(74) Ibidem, No. 21 (1880-81), p. 83.

not more than half the children vaccinated are brought back for inspection. Of this half, a number varying from one-eighth to one-sixth, have not taken at all. Of the remainder, a very considerable ratio have had the vesicles broken by accident or carelessness, or covered with native medicine.

From a later report (75) it can be gathered that the unwillingness on the part of the parents to return with their children for inspection was principally due to the fear that the vesicles would be interfered with, so that they preferred to forfeit the deposit demanded. This situation was rapidly improved when, about the year 1890, calf-lymph became easily available. The first lot from London proved ineffective (76), but Japanese lymph proved excellent in 1891 (77) and Mr. Edward Evans was asked to accept the agency for this product (78). It seems, however, that by 1894 Saigon lymph was almost exclusively used (75, 79).

In the meanwhile the question of manufacturing a local product was ventilated and found approval in 1893, when Dr. Henderson, on leave in England, was empowered to buy the necessary outfit (76). It was, however, not before October, 1896, that this institute was opened. Even then no special accommodation was available, one building on the Municipai cattle-shed lot in Hongkew being used (80). Vaccine was given free of charge to the General Hospital and the Chinese ones. It appears that this plant was given up when the new building of the Health Department, comprising an up-to-date laboratory, was opened in 1903.

During all this time the Chinese Vaccination Department continued its activity, being as heretofore staffed by Chinese doctors of the Shantung Road Hospital (80); in fact it seems that Dr. Hwang Chen-foo (though now called Wang Chung-fu) was still in charge by 1895 (81). As far as the International Settlement was concerned, vaccinations were performed both in the Shantung Road Hospital and in the Hongkew Hospital in Boone Road (75). The Municipal Vaccination Dispensary connected with the former was closed in 1895 and new agreements were made with both Missionary hospitals (81).

The old-style variolation was by that time not altogether abandoned for in 1895 the new Taotai was applied to for a renewal of the proclamation prohibiting this method.

In order to bring this narrative up to date, it may be stated that from 1903 onwards free vaccination was offered on a considerable

(75) Municipal Health Report for 1894.

(76) Ibidem, 1893.

(77) Ibidem, 1891.

(78) China Med. Miss. Jl., 1891, p. 255.

(79) Jamieson, Customs Med. Rep. No. 48 (1894), p. 77.

(80) Municipal Health Report for 1896.

(81) Ibidem, 1895.

scale by the Health Department of the International Settlement (82) and that since 1926, an even more intensive campaign has been conducted by the Greater Shanghai and French Settlement authorities. Smallpox vaccine is produced in large quantities at the Public Health Laboratory of Greater Shanghai.

In conclusion it seems well to quote a recently published note (83) showing how much, even in our times, modern medical practices are still coupled with ancient beliefs:—

The month of March was a good one among the Chinese for vaccination against smallpox, for March 6th was the day of the "Festival of Flowers," one of good luck and happy auspices, and specially favourable, according to Chinese legend, for protection against smallpox so that all day from morning till evening Chinese babies were brought in great numbers for vaccination. During the month, altogether 15,526 free vaccinations were done at the Branch Health Offices.

Vaccination was early introduced from Shanghai into Soochow. An intelligent Chinese physician applied to Dr. Lockhart for instruction and was properly trained. He was then supplied with lymph and pamphlets. He reported after his return to Soochow that many children had been submitted to him and Lockhart hopes

that he has been able to go on with his good work, conferring benefits on the people around him (84).

It appears, however, that the old-style method of variolation persisted long in spite of the early introduction of the modern practice. For Kuang Hsunli, writing in 1923 (85), still notes the existence of several stations of this kind, all supported by guilds, charitable funds or the like. A central station, situated in the Kwan-ti Temple was even officially recognised by the local government and maintained by certain public funds. Its drawbacks were many:—

In the first place, it is open only for three or four months out of the year, generally between the Chinese third and seventh moon. Then the man in charge is not even of standing among the native medical practitioners. The method used is old-fashioned. A child with pustular pox serves the stock vaccine. The technique is simply to inoculate the discharge of the diseased on the arm of one to be vaccinated. No aseptic or antiseptic precaution is taken while the charge is thirty cents per head.

It is gratifying to note, however, that the more intelligent part of the population availed themselves of the facilities for modern vaccination offered by the hospitals and modern-trained practitioners.

Lockhart, when beginning his activity in Shanghai, learnt of the existence of a vaccination establishment at Nanking, but was unable to obtain definite intelligence respecting it (86). Presumably it owed its existence to the initiative of the Canton workers.

(82) *China Medical J.*, 1929, p. 340.

(83) *Ibidem*, 1925, p. 477.

(84) Lockhart, *The Med. Missionary in China* (1861), p. 242.

(85) *Nat. Med. J.*, 1923, p. 129.

(86) *L.c.*, p. 238 and 1844-45 Report.

Dr. Macgowan in his 1846-48 Report of the Missionary Hospital at Ningpo mentions having received good vaccine from Lockhart but that only few Chinese could be induced to submit their children; specially they did not want their sons to be vaccinated. In a subsequent report published in 1852 no considerable improvement is noted. An itinerant Chinese vaccinator visited the city but "met with no better success than the foreign physicians in attempting to introduce the practice." Possibly this vaccinator was identical with the Dr. Tsau, mentioned in a letter from Dr. McCartee of Ningpo to Dr. Kerr (87). This Chinese vaccinator was sent for by the Prefect of Ningpo to vaccinate the latter's children and brought a child from his own city of Tai Chan to Ningpo from whom to take the lymph. Some more children were submitted to him but the people had no faith in the method and disliked the idea of having their children inoculated in summer time. Dr. McCartee showed him

how to preserve lymph, and also how to preserve and use the crusts or scabs, gave him lancets, and several times since has sent him crusts from Ningpo, in answer to letters or by the hands of messengers sent by him to procure them.

During and after a most severe smallpox epidemic raging at Ningpo in 1893-94, many children were vaccinated by Dr. Molyneux, who stressed the desirability of re-inspection so that the method might not become discredited through the unsuccessfully vaccinated (non-takes) contracting smallpox (88).

It seems that these fears were not warranted. A free vaccination institute was started by the Commissioner of Customs in 1896, which in due course "completely won over the lower classes" (89). Another report, issued in May, 1909, (90) says that vaccination is performed gratuitously at the police station and considerable numbers attend in spring especially. Shanghai vaccine was used and proved satisfactory. However, smallpox was still "endemic at all seasons of the year."

By 1919 it was recorded (91) that the public vaccination stations had appreciably lowered the incidence of the disease, the people of Ningpo learning the value of vaccination as opposed to inoculation.

A Chinese physician practised vaccination at Hangchow in 1851 (92). From 1871 onwards the services of the Missionary Hospital,

(87) Referred to in the Report of the Canton Missionary Hosp. for 1860.

(88) Customs Med. Rep. No. 47 (1893-94), p. 11.

(89) Customs Decennial Reports, 3rd Issue, Vol. II, p. 67.

(90) Mills, Customs Med. Rep. for the Period April 1, 1907, to May 31, 1909, China Med. Jl. 1910, p. 58.

(91) Sugg, China Med. Jl., 1919, p. 391.

(92) Macgowan, Report of the Hospital at Ningpo for 1851, Canton 1852.

first under Dr. Galt and then under Dr. Main, became available, a Catholic Hospital having already been opened two years earlier. In spite of all these facilities it can be gathered from a 1912 report (93) that smallpox "was prevalent as in previous years." Old-style variolation was still much practised in spring, but was undoubtedly losing ground, many Chinese practising the new method.

In Kerr's 1860 Report a Chinese vaccinator is mentioned as practising in Foochow, who, however, was unable "to keep up the transmission of the virus without interruption." Nevertheless, the practice seems to have been kept up as testified by a curious advertisement of a Chinese vaccinator which Dr. Somerville found posted in the neighbourhood in 1877 (94). Here it was said:—

Vaccination was introduced hither from Europe. It is practised by "planting" three "seeds" of virus in a spot upon the left and right arms above the elbows. This spot is called the cold-dispelling pool, and upon it is formed the virus and a scab, there being no eruption upon the body generally.....

Dr. Somerville adds that during the last two years he has made enquiries as to the comparative frequency with which the old-style method of 'Cultivating Heaven's Flowers' and Jenner's method were practised. The result was quite satisfactory, "the suspicion with which vaccination was formerly regarded as a subtle device of the wily foreigner dying out, though of course it will be a work of time." This opinion was endorsed by an authority like Dr. Osgood, who said that there were 20-30 Chinese practising the modern method.

Dr. Rennie's 1880-81 Report(95) was not so optimistic; he alluded to annual smallpox outbreaks, "vaccination among so conservative a people as the Chinese having made but slow progress."

Gradually, however, the situation improved. M. Mackenzie (29) writing in 1909 stated that

the old practice of inoculation is passing very much out of use. I think there is nothing that we have brought the Chinese in which there is a more widespread confidence than in vaccination. They have no superstition to oppose it, as far as I know, and they acknowledge its beneficial results with a unanimity that is a comment upon the intelligence of the Westerners who have conscientious scruples against being vaccinated.

Two drawbacks remained, viz: (a) Revaccination was in Foochow as everywhere considered unnecessary, the inoculation being believed to protect "as long as the scar remains;" (b) Vaccination was not performed upon young children.

Jenner's art was evidently introduced comparatively early into Chefoo where, according to a report by Dr. W. A. Henderson, rend-

(93) Duncan Main, Customs Health Report for 1912, Ch. Med. JI., 1913, p. 329.

(94) Customs Med. Reports No. 14 (1877), p. 89.

(95) Ibidem, No. 21 (1880-81), p. 52.

ered in 1886 (96), "for many years children have been vaccinated." In 1890 a "Hall of Benevolence" was opened by the Chinese which instituted among other charitable undertakings a department for vaccination (97).

Dr. David Manson recorded in 1873 (98) that a considerable number of persons had been vaccinated at Takow and Taiwan, Formosa. It appears that the inhabitants of that island held small-pox in great awe, it being

the custom among the aborigines for the friends and relatives to desert the infected house, leaving at the bedside of the sufferer sufficient food and water to last during the natural course of the disease. . . . Sometimes the entire population of a village will on the occurrence of a case decamp en masse (99).

Chances for a spread of vaccination were thus favourable and in fact Dr. Rennie mentioned four years later (100) that the people "most enthusiastically run" after vaccination. Five vaccinators connected with the foreign hospital were busy in the surrounding district.

Dr. Myers testified in 1882 (101) to the same effect. Unfortunately, however, quite a number of impostors were at work who did not use genuine lymph though demanding a fee of \$1 for each male child and half that amount for each girl vaccinated.

Dr. E. I. Scott recorded in 1877 (102) that vaccination was extensively practised in the Swatow district, partly on account of a smallpox epidemic then raging and partly on account of the propaganda of the numerous Chinese vaccinators, who—it appears—availed themselves of the lymph supplied by Dr. Scott.

A smallpox epidemic occurring at Hoihow (island of Hainan) in 1876 induced the people to adopt precautions against the dread disease by providing for an annual vaccination campaign with the aid of Chinese vaccinators sent for from Hongkong (103). The operator at work in 1880-81, who hailed from the Tung Wah Hospital, came again in the next season but left early for Pakhoi, the work being continued by six petty officials sent down by the Canton Viceroy (104). The people would have nothing to do with these evidently not well trained men, so that in 1882-83 the vaccinator Wang from

(96) Ibidem, No. 33 (1886-87), p. 9.

(97) Customs Decennial Reports, 1st Issue, p. 60.

(98) Customs Med. Reports No. 5 (1872-73), p. 27.

(99) According to the account by Captain Turner, mentioned on a foregoing page, similar customs prevailed among the Tibetans.

(100) Customs Med. Rep. No. 13 (1876-77), p. 42.

(101) Ibidem, No. 23 (1881-82), p. 23.

(102) Ibidem, No. 13 (1876-77), p. 9.

(103) Ibidem, No. 21 (1880-81), p. 76.

(104) Ibidem, No. 23 (1881-82), p. 31.

Tung Wah Hospital came again and performed most laudable work with the aid of his son. From the report of Customs Medical Officer Aldridge (50) it can be gathered that the salary of Dr. Wang was paid by the Tung Wah Hospital and that the sum of 100 cash was charged for vaccination, in part to defray expenses for chair hire, paid by the Tung Wah Hospital and that the sum of 100 cash was etc., in part to reward the parents of the child from whose arm lymph was taken. After having performed 6,500 inoculations in and near Hoihow, Wang made a tour through the eastern districts of the island.

The work was taken over in 1885 by the new Chinese hospital, founded by the officials and merchants of the district and staffed by three doctors trained in the Tung Wah hospital(105).

Vaccination, which in 1877-78 was not yet practised at Wenchow (106) seems to have made considerable headway during the year following. Dr. Macgowan (107) expresses, however, the fear that spurious vaccine might be used by unscrupulous vaccinators so that in the end more harm than good might result. He would like therefore to see duly qualified vaccinators licensed and all others forbidden the practice. He adds most interesting information furnished by Dr. Douthwaite which may be quoted in full:—

At Kinhua vaccination has been taken up by the Buddhist priesthood, their temples having recently become the resort of mothers carrying their infants there for the operation, having implicit confidence in sacerdotal intercession with the gods for success; and as the fraternity surround the act with mystery and imposing ceremonies, they are likely to monopolise the new vocation. In like manner, secular practitioners of vaccination have been induced to resort to various devices to impress parents with the supernatural character of the rite, directing them to make pilgrimage to certain shrines, and the like during the period of incubation. A native Christian vaccinator who would not thus deceive the people has lost all his practice, and was obliged to adopt another calling.

In 1917 public free vaccination was introduced at the 育嬰堂 Orphanage, subsidised by the local authorities and carried out by one of the Roman Catholic Sisters. Thousands of children attended(108).

In the year 1882 the Taotai of Kiukiang (Kiangsi Province), stimulated by the success of the Roman Catholic Hospital, opened a dispensary and vaccination station in the city; vaccinators were also sent to outlying villages(109).

Vaccination work at Ichang is characterised by the early and consistent interest Chinese benefactors took in it. Customs Medical

(105) Ibidem, No. 31 (1885-86), p. 18.

(106) Myers, ibidem, No. 15 (1877-78), p. 40.

(107) Macgowan, ibidem, No. 22 (1881), p. 46.

(108) Customs Decennial Rep. 4th Issue, Vol. II, p. 123.

(109) Dr. Underwood, Customs Med. Rep. No. 26 (1883), p. 29.

Officer A. Henry noted in spring 1883 (110) that a good deal of vaccination had been done at the instance of an association which subscribed the funds necessary for obtaining the lymph from Hankow. Whether *post* or *propter hoc*, smallpox was not nearly so prevalent as in former years.

In the Customs Decennial Reports for 1882-1891, reference is made (111) to the philanthropic work of the P'ei-yuan-shan-t'ang, providing vaccination at nominal charges.

Dr. Graham, writing in March, 1909 (112) dwells upon the great number of vaccinations performed by him as well as at the Pei Yuan Tang (培元堂). In the latter establishment arm-to-arm inoculation was carried out, the donor "receiving the fee of 100 cash charged."

The last report available (113) contains the statement that smallpox, although still present, tends to become less virulent. This is doubtless due to the readiness with which the Ichang people avail themselves of the facilities for vaccination tendered by several of the Shan-t'ang (善堂) in the city.

Dr. Jamieson, in a description of the country bordering the Lower Yangtze (issued in 1885—114), testifies to the spread of vaccination. Unfortunately, however, the Chinese vaccinators were sometimes unscrupulous in regard to the genuineness and purity of the material used for the inoculations.

According to a report rendered by Dr. R. G. White in March, 1886 (115), the large number of people adopting the modern method of vaccination at Chinkiang (Kiangsu Province) was gratifying. Old-style variolation had however not yet been given up altogether.

When dealing with Hoihow we stated that vaccinator Wang paid in 1881 a visit to Pakhoi. This probably did not lead to the permanent introduction of modern vaccination in the port which a later report (116) ascribes to Dr. Horder of the Church Missionary Society (who came to Pakhoi in 1883, but started regular work not before 1886 and opened a hospital in 1887). The above report by Customs Medical Officer Sharp Deane, issued in 1894, expresses satisfaction as to the progress of vaccination. Observation of the good results obtained at Hongkong and Tonkin induced the Chinese themselves to adopt the method. Lymph was imported from Hongkong but after the work had been started with the aid of this early in each season, arm-to-arm inoculation was in use for poor people.

(110) Ibidem, No. 25 (1882-83), p. 1.

(111) p. 147.

(112) Customs Med. Rep., 68th-80th Issues (1911), p. 61.

(113) Customs Decennial Reports, 3rd Issue, Vol. I, p. 284.

(114) Customs Med. Rep. No. 29 (1884-85), p. 28.

(115) Ibidem, No. 31 (1885-86), p. 9.

(116) Ibidem, No. 47 (1893-94), p. 19.

An interesting survey of the work at Chengtu (Szechwan Province) was given by Jouveau-Dubreuil(117), according to whom the first vaccinations in this province were performed by British, American and French missionaries about the year 1890. It was, however, not possible to popularize the method for three main reasons, viz.: (a) small number of modern-trained practitioners; (b) the distrust and even contempt with which the people looked upon foreign science; (c) last but not least the difficulty to procure a potent vaccine. That obtained from Hongkong had to stand a journey of 30-40 days so that on arrival it showed lessened activity or none at all. Some improvement resulted from the completion of the Hanoi-Yunnanfu Railway in 1909, when vaccine from the Hanoi Institute became available. Yet even then results were far from completely satisfactory.

These difficulties formed one of the reasons for which the French Foreign Office decided to establish a bacteriological laboratory at Chengtu. This plant, erected in 1909-10, was able to start vaccine manufacture in 1911. In trying to introduce the product, the Institute aptly relied upon the co-operation of the native practitioners rather than upon the few foreigners with their limited sphere of activity. This scheme proved most successful, the Chinese vaccinators not only of Szechwan but also of Kweichow and Yunnan provinces becoming customers of the Institute. The number of doses issued exceeded in 1920 100,000, and Jouveau-Dubreuil considered that practically all the children of Chengtu City itself were vaccinated about this time.

As can be gathered from a report written in September, 1891, vaccination had made little headway by then in Seoul, Corea(118). In spite of the destruction caused by the old-style method it was difficult to administer modern vaccination to a number of children sufficient to keep up a supply of vaccine. Nevertheless it was gratifying to note that some of the Corean practitioners adopted Jenner's method.

In the year 1900, when smallpox was raging in Tibet, a missionary lady performed vaccinations at Yatung (119).

A 1906 report from Chungking(120) states that at last old-style variolation is coming into disrepute and that a prominent Chinese gentleman has offered to pay for all vaccine and the cost of operation. He billed the city and requested the people to call upon the Customs Medical Officer J. H. McCartney, to whom he had entrusted the work. Dr. Freeman, writing in 1909 (121) was unable to note great results

(117) China Med. Jl., 1920, p. 41.

(118) Customs Med. Rep. No. 42 (1891), p. 8.

(119) Customs Decennial Reports, 2nd Issue, p. 504.

(120) Customs Med. Rep., 68th-80th Issues (1911), p. 19.

(121) Ibidem, p. 73.

of this free vaccination, offered already for five years. The Chinese practitioners had given up variolation but bought vaccine at the beginning of the season only, then evidently relying upon the arm-to-arm method. Wealthy people procured their own vaccine.

Very noteworthy was the work of Dr. Brinton Corlies in the Yachow district of Szechwan. He taught one of his Chinese assistants not only how to vaccinate human beings but also how to produce the virus from calves. Excellent vaccine had been turned out by this man since 1906 and practically the whole population had availed itself of this opportunity with a corresponding scarcity of smallpox cases (122).

Vaccination was totally unknown at Tengyueh (Yunnan province near Burma) when Dr. Ram Lal Sircar was appointed first Customs Medical Officer in January, 1903(123). Variolation was practised, either by scarification of the arm or by the nasal method. In spite of the harm wrought by this method nobody applied when Dr. Sircar tried to introduce Jenner's art. Gradually, however, this method began to make headway; in 1908 Sircar recorded(124) having vaccinated over 100 children during each of the last two years. Moreover many native practitioners were doing a brisk business, although the majority of people still adhered to variolation. The Chinese vaccinators, on account of the scantiness of the lymph which they received from Burma, collected scales from successfully vaccinated cases for storage. When wanted, they powdered these and mixed them with human milk, inoculating with the resulting paste. This, however, proved frequently non-potent. The local authorities tried to advance a step by establishing a free vaccination station under a Chinese practitioner. He performed over 500 vaccinations but his work became unpopular as infection resulted and some of those vaccinated by him contracted smallpox.

In March 1909 Dr. Wihal Chand reported (125) good progress and highly commended the activity of his predecessor, Dr. Sircar, to whose initiative and perseverance all success was due. Dr. Chand wrote equally satisfied in 1910 (126) and added that some of the Chinese vaccinators now constantly used foreign vaccine.

An outbreak of smallpox in February and March, 1911, was mild in character. Dr. Sircar, who had resumed his duties, again commented upon the increasing popularity of vaccination; nevertheless the friends of old-style inoculation were still in a majority(127).

(122) Shields, *China Med. Jl.*, 1912, p. 31.

(123) *Customs Med. Rep.* No. 66 (1903), p. 19.

(124) *Ibidem*, 68th-80th Issues (1911), p. 38.

(125) *Ibidem*, p. 58.

(126) *Ibidem*, p. 100.

(127) *China Med. Jl.*, 1912, p. 48.

During the year ending March 31, 1912, progress continued, the Chinese vaccinators being busy besides Dr. Sircar himself (128).

According to the next report (129) "vaccination is pushing ahead in the distant corners of the most backward villages and the *Chiu-hua* or blowing-up system is gradually dying out." The Chinese vaccinators continued to use lymph in tubes.

In 1917 two men were sent by the local authorities to Shanghai, not only to learn vaccination but also the technique of lymph production as it was contemplated to erect an institute for the preparation of vaccine at Tengyueh (130).

The two latest reports available (1918 and 1921-1931) testify to the absence of smallpox which used to be prevalent every spring. This satisfactory result is ascribed to the steadily increasing number of vaccinations.

An official vaccination campaign was started in Hankow in 1915 (132) with the help of the Mutual Protection Societies. The result was most encouraging, 15,108 vaccinations being performed during four months. Hongkong vaccine was used throughout.

How much can be performed nowadays by the action of an energetic and up-to-date official is shown by the example of *Kinhwafu* in Chekiang province. Here the Fu (府) official, dissatisfied with the evils resulting from old-style inoculation, selected 15 of the vaccinators to whom he agreed to issue certificates provided that they received proper instruction from the Missionary Dr. Mackenzie; only the holders of such certificates to be permitted to vaccinate hereafter. This scheme was successfully carried out. A standard vaccination outfit was assembled and permanently exhibited at the Yamen while each operator had to obtain vaccine and dressings through official channels (133).

(128) Ibidem, p. 248.

(129) Ibidem, 1914, p. 41.

(130) Ibidem, 1918, p. 187.

(131) Chand, *ibidem*, 1919, p. 78; Customs Decennial Rep., 4th Issue, Vol. II, p. 398.

(132) Shu, *Nat. Med. Jl.*, 1916, p. 46.

(133) *China Med. Jl.*, 1916, p. 283.

CHAPTER IV

PERIOD 1820—1842

PERMANENT INTRODUCTION OF MODERN HEALING METHODS BY THE SURGEONS TO THE EAST INDIA COMPANY AND THE FIRST PROTESTANT MEDICAL MISSIONARIES

Ship surgeons—First Dutch and British surgeons stationed in China—Pay of East India Company surgeons—Difficulties confronting medical work in South China—Splendid behaviour of the surgeons—Dispensary for Chinese opened A.D. 1820 at Macao by Dr. Livingstone and the Rev. Morrison—Dr. Colledge founds A.D. 1827 Ophthalmic Hospital at Macao—Other activities of Colledge—Provision for foreign sailors—Influence of Colledge's work upon Missionary societies in America and England—Arrival of first medical missionary Dr. Peter Parker—Missionary Hospital at Canton opened (A.D. 1835)—Dr. Parker starts with medical training of Chinese—Foundation of Medical Missionary Society in China—Dr. Parker sent temporarily to Macao—Arrival of Drs. Lockhart, Hobson and Diver (A.D. 1839)—First Anglo-Chinese war—Dr. Lockhart goes to Chusan—Canton Hospital closed—Dr. Parker travels on behalf of the Medical Missionary Society to America and Great Britain—Arrival of the Rev. Gützlaff and Rev. Dr. Boone—General survey of the period 1805-1842.

In the chapter before last allusion was made to the early foundation of Portuguese hospitals at Macao. We did not then continue with a discussion of medical activities in this settlement and the neighbouring city of Canton during the 17th and 18th centuries because what little we know in this regard can with better advantage be inserted here.

The ships of the East India Company were presumably from the first accompanied by surgeons. It is on record(134) that in A.D. 1685 surgical attention was given to a wounded "Tartar" on board a

(134) Morse, L.c., Vol. I, p. 60.

vessel, while in 1735 a surgeon's mate is mentioned as having removed a ball from the arm of a wounded Chinese woman (135).

The 'Council' of the East India Company sent out to China (Chusan) in 1700 was accompanied by a surgeon and it is presumably from this time onward that medical men were permanently stationed in the factories. A Dutch surgeon who administered to a Chinese wounded by one of the factory men is mentioned in the chronicles for the year 1739 (136), while the first definite mention available in regard to resident British surgeons at Canton and Macao (between which two places the factory staff alternated, leaving Canton for Macao during the off-seasons) dates back to the year 1779 (137). This refers to a Mr. Abraham Leslie, junior surgeon to the British factory. He was apparently an able man for he was recommended in that year for promotion to the post of senior surgeon, but certainly he was smart in business as well, lending his savings at high interest to the Chinese merchants. On one occasion when one of his debtors got bankrupt, the doctor forcibly seized his house, disobeying the orders of his superiors to return to the factory. He proceeded similarly on a second occasion, though, as the chronicler drily remarks, he had certainly received more than the original principal. Leslie stayed behind the supercargoes in Canton and had to be forcibly brought to Macao where he was finally arrested by the Council in 1781. In 1783 he visited India where he was bold enough to complain personally to the Governor-General who, however, refused to support his claim (138).

The Factory surgeons in 1795 were Messrs. Duncan and Crichton (139); it was probably one of these who had taken care of a wounded Chinese the year before (140). In March, 1799, a census was taken of the Europeans residing during the off-season at Macao; this comprised one English surgeon besides a Dutch one. No names are given, so that we could not definitely establish when Dr. Pearson began his activities in China.

From Morse's History of the East India Company in China some data may be collected in regard to the salaries the surgeons of the Company received. The ship surgeons usually ranked—as far as pay and 'privileges' were concerned—with the third officers and pursers, their assistants with the fourth officers. The salaries the resident surgeons received may be gathered from the following table:—

(135) Ibidem, p. 236.

(136) Ibidem, p. 270.

(137) Ibidem, Vol. II, p. 66.

(138) Ibidem, p. 85.

(139) Ibidem, p. 266.

(140) Ibidem, p. 260.

1812	A. Pearson, Surgeon	£1,200 annual share
	J. Livingstone, Asst. Surgeon	£1,000 " "
1815	A. Pearson, Surgeon	\$5,000 salary
	J. Livingstone, Surgeon	\$4,167 "
1816—	ditto	£1,300=\$5,417 salary
1818		£1,000=\$4,167 "
1825	ditto	£1,300 salary \$1,000 Table Allowance
		£1,000 salary \$1,000 Table Allowance
1827—	Dr. Pearson, Surgeon	ditto
1829	Thomas R. Colledge, Asst. Surgeon	ditto
1833	Th. R. Colledge, Surgeon	£1,200
	Richard H. Cox, Asst. Surgeon	£ 500

That provision was made for the medical officers after their retirement can be gathered from an entry made in 1830 (141) in regard to the Rev. Robert Morrison, translator and Chinese teacher to the Company. By that year his salary had been increased from £1,000 to £1,300 but the Court of Directors refused to sanction the recommendation of the Committee that he be placed on the same footing as the surgeons "for pension or retired pay."

That the medical officers were well paid is corroborated by a contemporary account written by Sir Andrew Ljungstedt (1759-1835) (142), for many years President of the Swedish Factory and author of the work "Macao and China." In a pamphlet published in 1834 under the anonymous name of "A Philanthropist" he dwells upon "the liberality of provision and allowance made by the Honourable East India Company for all classes of their servants" and mentions expressly that "they allowed to their medical servants salaries so ample that they were satisfied, and 'went about doing good'."

In order to do full justice to the activities of the surgeons of the East India Company it is necessary to characterise the opportunities and difficulties they were confronted with. It may be stated at once that before 1805 mention can rarely be found of any medical aid given by them or their Dutch colleagues to the Chinese. In fact, the only occasions they treated such patients seem to have been when Chinese were wounded by Europeans. This is easy to understand since the Chinese laws of that period held anyone responsible for the death of a person to be guilty of murder and liable to execution. The foreigners therefore took a vital interest in the recovery of any Chinese who had been wounded by them.

(141) Ibidem, Vol. IV, p. 226.

(142) J. C. Thomson, Chinese Recorder, Vol. XIX, p. 35.

Considering the great popularity the early medical undertakings of the Jesuit Fathers enjoyed it seems surprising at first glance why it took about one century at least before systematic medical work for the Chinese was instituted by the foreign doctors at Macao and Canton. However, conditions here were vastly different from those at Peking where the Jesuits had won the full confidence of the official classes before they ventured upon medical undertakings. In Canton and Macao on the contrary, a wide chasm existed between Chinese and foreigners, scantily bridged over by strictly official and commercial dealings. We have said already that business on the Chinese side was monopolised by a handful of *hong* merchants who as a rule acted also as go-betweens when the foreigners had to deal with the officials. And, as can be gathered from contemporaneous *foreign* sources, this state of affairs had been mainly brought about by the attitude of the first Europeans coming to the South of China. In an early issue of the Chinese Repository (143), for instance, we read:—

The Chinese need *ocular* demonstration of the intelligence, practical skill and kind feelings of those who come to their shores from far. They have had proof enough of their enterprise and bold daring; and not a little too of their shrewdness and foresight; but very rarely have they had opportunity to witness deeds of charity and acts of benevolence. Were the records that are on high, let down before our eyes, what dark scenes would they disclose! Many of the adventurers, who first penetrated to this farther East, two centuries ago, were as reckless and cruel as they were bold and intrepid. An honorable commerce, and the exercise of Christian charity would never, we apprehend, have closed against foreigners the northern ports of China, or those of Japan. We allude to these things as the scenes of other times, and with the most confident expectation that they are not to be re-enacted. . . .

A few years later it was stated in the same journal (144):

Were we to manifest in many matters a less imperious and a more kind and considerate spirit, the Chinese Government would speedily abate a large measure of its suspicions of the encroaching character of those living beyond the pale of its civilisation."

Considerations like the above show us on one hand why it was difficult to establish contact between the Chinese and the Western medical men and make us realise on the other what the life of the foreigners, who had to reap what their predecessors had sown, must have been like. Far from their home, bereft for part of the year at least of their families, who were not permitted to follow them from Macao to Canton, secluded from their Chinese neighbours they must have lead a life virtually similar to that of war-prisoners. It reflects great honour upon the British medical profession and it is gratifying to every medical man that the doctors behaved nobly under

(143) Vol. II, p. 271.

(144) Vol. VII, p. 551.

these trying conditions. Sir A. Ljungstedt, to whose unbiassed judgement we must again appeal, says that

those benevolent men were never called upon in vain to attend the sick of whatever nation or rank; they felt no distinction; all was merged in benevolence to mankind, as thousands, who have experienced the kind ministrations of the East India Company's late and present surgeons on the Chinese station, have testified. . . .

They were not the mere formal practitioners of their profession; they entered into the chambers of the sick, carrying healing and balm to the mind as well as body; they were patient hearers of the often told and long details of enervated, distressed and melancholy minds; and would soothe and cheer the afflicted by expressions and acts of sympathy. Strangers at once found their physician a friend, in whom they could confide and unburthen their minds, and receive consolation. Who is there that has been sick, away from home and friends, in the midst of strangers, that has not felt a deep and desolate despondency of heart, worse than death, for want of one sympathizing being to commune with and administer at his bedside. Those who have been thus placed may imagine the relief given by the benevolent visits to the sick by the philanthropists alluded to. I have seen and felt, and the impression is fresh in my memory, and will continue while I live to excite my gratitude.

After this general appreciation of the work of the surgeons to the East India Company, which helps us to understand why Dr. Pearson eagerly seized the opportunity to practice gratuitous vaccination among the poor, we can continue now with a contemplation of medical activities instituted by the western doctors for the benefit of the Chinese.

The next step was the foundation, in the year 1820, of a dispensary for Chinese at Macao by John Livingstone, surgeon to the East India Company and the Rev. Robert Morrison, D.D.

We possess but little information about the former, "the first person who systematically brought medical aid within reach of the Chinese" (145). It would seem that he had been in China since 1808 (146). As can be seen from the table inserted earlier in this chapter, he first served as Assistant Surgeon under Pearson while he figures in the lists for 1815 as surgeon though still drawing the same salary.

The life history of the Rev. Robert Morrison, the "Father of the Chinese Mission," is better known. Born at Morpeth (Northumberland) in 1782 as the son of a religious family he offered his services in 1804 to the London Missionary Society (founded in 1795). In the next year he took up a short course of medical study for missionaries at St. Barts., London. At the same time he began the study of the Chinese language through the manuscripts at the British Museum, in which arduous labour he was helped by a Cantonese student, Yong Samtuk.

(145) Thomson, *China Med. Miss. J.*, 1887, No. 2.

(146) Thomson, *Chinese Recorder*, Vol. XVIII, p. 392.

Morrison left for China in 1807. Because of the petty hostility of the East India Company to Protestant missions and missionaries he had to travel *via* America, which country he reached after having been 109 days at sea. He then took passage *via* Cape Horn and arrived at Canton on September 7, 1807, where with the aid of two Roman Catholic Chinese he energetically pursued his language studies. In 1809 he joined the East India Company, drawing £500 as interpreter and the same sum as instructor in the Chinese language. Dr. Pearson was one of his pupils in 1812.

For printing and circulating parts of his Bible translation by stealth he was dismissed by the Company in 1815. In the next year he joined the Amherst Embassy as an interpreter and thus travelled to Peking (147). Afterwards he re-entered the Service of the East India Company where he continued until his death in 1834 (148).

The most detailed description of Livingstone's and Morrison's dispensary now extant is contained in a valuable article "Historical Landmarks of Macao" by J. C. Thomson (149). From there it can be gathered that Livingstone's idea in founding the dispensary was not only to give aid to the poor sick but to find out whether the Chinese Pharmacopoeia "might not supply something in addition to the means now possessed of lessening human suffering in the west." He therefore invited the co-operation of Dr. Morrison on account of the latter's great command of the language. A Chinese medical library consisting of upwards of 800 volumes was installed with a complete assortment of Chinese medicines. A respectable Chinese physician, Dr. Lee, was engaged; occasionally a herbalist attended to explain the properties of the various articles supplied by him. Livingstone and Morrison spent one to two hours every morning at the Institution to supervise and assist Dr. Lee, who seems to have been in actual charge. Some help was evidently also given by Dr. Pearson, for he wrote in 1821 (150):—

I have also been able to give pretty constant attendance and have had an opportunity of observing the details of Chinese practice, in from about 10-15 cases daily.

Strange to say he spoke only of Morrison as the founder and regular consultant of the dispensary and did not mention his assistant Livingstone.

(147) Broomhall's Book on Robert Morrison.

(148) Williams, *The Middle Kingdom*, 1901 edition, p. 319.

(149) *Chinese Recorder*, Vol. XVIII (1887), p. 392.

(150) *Anglo-Chinese Gleaner* for January 1821, pp. 6-7, as reprinted in the *Chin. Repository*, Vol. X (1841), p. 21.

The success of the dispensary was evidently assured from the very beginning, as shown by a statement of Livingstone himself republished in the above mentioned article by Thomson (151):—

Already much good has been done, much suffering has been relieved (hundreds were treated), and upwards of 300 patients have made very grateful acknowledgment for renovated health. . . .

Besides our commercial intercourse, which is not always helpful to friendly sentiments between man and man, we have hitherto had little or no opportunity of establishing with them those friendly reciprocations of beneficent acts which must ever constitute the foremost bonds of social intercourse. Such attempts as this seem calculated to produce speedily the best results. . . .

I am certain we have in the short time in which the Institution has existed, fully proved that we are both able and willing to do them much good; and that both they and we have much useful information to impart to each other.

Information about this institution is so scanty that it is impossible to establish definitely how long it was maintained. Kerr, in his *History of the Medical Missionary Society Hospital at Canton* (152) merely said that "it does not seem to have been kept up very long." Pertinent information is that Morrison left China on furlough in 1823 and stayed away until 1826, while Livingstone departed after 1825, destined never to return to the field of his benevolent activities. In 1829 he is reported to have died at sea while travelling to China (153).

Livingstone's and Morrison's attempt is very remarkable not only for being the first of its kind in the South of China (154) but still more because contrary to the practice of their successors, they tried to work hand in hand with the old-style practitioners.

The place of these two workers remained empty only for a short time. In 1827 Dr. Thomas Richardson Colledge, known as "the Chinaman's Friend," began medical work for the Chinese at Macao. Born in the year 1797 he passed through Rugby school and studied medicine at Leicester Infirmary and St. Thomas's Hospital. According to Balme it was a strange accident that had first taken him out in 1819 to the Far East: A ship doctor had failed to report for duty and Sir Astley Cooper recommended his favorite pupil Colledge for the post. A few years later (1826) he joined the East India Company as Assistant Surgeon to the China station (155).

(151) This had appeared before in 1821 in the *Indo-Chinese Gleaner* (Vol. III, p. 5).

(152) *China Med. Miss.*, JI., 1896, p. 55.

(153) Morse, *l.c.*, Vol. IV, p. 187.

(154) Brayton Barff, in a series of articles published in the *North China Herald* in 1926, states that Dr. Pearson while chiefly confining himself to vaccinations, "did a certain amount of dispensary work for such Chinese as would risk themselves in his hands or to his prescriptions." We were unable to establish upon whose authority this statement was made.

(155) *A Brief Account of an Ophthalmic Institution, etc.* By a Philanthropist. Canton, 1834. See also *Chinese Repository*, Vol. II, p. 270 and Vol. III, p. 364 and Balme, *China and Modern Medicine*, London, 1921.

In contrast to most medical undertakings described above we possess a fair amount of information regarding Colledge's work (156). A most sympathetic account of this was published in 1834 by Sir A. Ljungstedt (155) to which we have referred already earlier in this chapter. Here a statement written by Colledge himself in October, 1832, is preserved which contains authentic data as to the foundation of the dispensary:—

In the year 1827, I determined to devote a large portion of my time, and such medical skill as education and much attention to the duties of my profession had made my own, to the cure of so many poor Chinese sufferers of Macao and its vicinity as came in my way. My intention was to receive patients laboring under every species of sickness, but principally those afflicted with diseases of the eyes; diseases most distressing to the laboring classes, amongst whom they are very prevalent; and from which the utter incapacity of native practitioners denies to them all other hope of relief.

During that year my own funds supplied the necessary outlay. Throughout I have received little or no professional assistance. In 1828, many friends who had witnessed the success of my exertions in the preceding year, and had become aware of the expenses I had incurred, came forward to aid in the support of a more regular infirmary, which I proposed to establish, and put me in possession of means to provide for the maintenance of such patients as I found necessary to keep for some time under my care, but who, depending for their livelihood on daily labor, could not otherwise have reaped the benefits held out to them.

Thus the hospital grew up upon my hands; confidence was established amongst a people who had been accustomed to consider foreigners as barbarians, incapable of virtuous, almost of human feelings; and the number of my inmates was regulated only by the limit of my accommodations. Two small houses have been rented at Macao, capable of receiving about forty patients; there are many more of the nature of out-patients, such only being housed, as, coming from a distance, have no friends with whom they can reside.

The best proof which can be offered of the entire confidence of the people and the benefits which have been conferred on them, is that since the commencement of this undertaking, about 4,000 indigent Chinese have been relieved from various maladies. . . .

The more opulent and respectable classes of Chinese, have in the last three years, added their names to the list of subscribers(157); and have, by giving the hospital the sanction of their support, much enlarged the circle of its usefulness. The E. I. Company has written of it in terms of approbation, and when applied to, has liberally supplied it with medicines.

Independently of the practical benefits conferred on suffering humanity, it is most desirable that the enlightened nation to which I belong should be known in this country as possessing other characteristics than those attaching to us solely as merchants and adventurers. As charitably anxious to relieve the distresses of our fellow-creatures, we may be remembered when the record of our other connections with China has passed away.

(156) A grandson of Colledge, Mr. Lionel Colledge, F.R.C.S., was until recently on the staff of Guy's Hospital, London, and had in his possession many records and coloured studies of Chinese cases made by the E. I. Co. surgeon at Macao (Balme and Brayton Barff, l.c.).

(157) In 1830, when the total amount of subscriptions was \$2,102.14 and the expenditure \$1,838, we find several of the Hong merchants among the donors. Their Senior Howqua continued to contribute up to 1832.

It can be seen from this statement, written apparently for the information of those donating through church offerings, that Dr. Colledge concentrated upon eye diseases. Serious surgical operations were evidently never undertaken. In fact one of the most curious incidents, not only in the history of the Ophthalmic institution but in the medical history of China in general, was the dispatch of How Loo, who was in need of such an operation, to England (158). This patient suffered from a tumour suspended from the lower part of the abdomen, estimated to weigh 17 lbs. (? elephantiasis of the scrotum). On Colledge's recommendation he was sent at the Company's expense to London to be operated on by Sir Astley Cooper. He bore the operation, which was actually performed by Mr. Key in Guy's Hospital and lasted one hour and 44 minutes, with conspicuous fortitude. Unfortunately he died—presumably from excessive loss of blood—soon after the operation though every endeavour, including a blood transfusion, was made to save him. The "Lancet" (159) harshly criticised the treatment accorded to the poor man, saying that he was given no time to become acclimatized in England, that too many spectators were admitted and that the atmosphere of the theatre was vitiated.

Colledge's Ophthalmic Hospital shut its doors towards the end of the year 1832, when—owing to the departure of his friend and colleague Dr. Pearson—"he could not do full justice to it." During its existence some 6,000 patients had been benefited.

Many Chinese testimonials, some still extant, praise Colledge's good deeds but perhaps the most fitting tribute to him was a painting by George Chinnery, an exiled Irish artist residing at Macao (160). As Ljungstedt puts it

the circumstances that suggested the idea to the artist were the following: An elderly Chinese woman, blind with cataract, was led by her son, a boy about fourteen years old, to Mr. Colledge for his aid. The operation was performed with thorough advantage, and the patient being convalescent, was about to leave Macao.

The picture represents Mr. Colledge as turning from his final examination of the woman's eyes, with his hand still resting on her forehead, towards an old servant, who acted as interpreter, in order to direct him to instruct her as to the care and means to be used for the preservation of her restored sight. The son, having prepared a chop, or Chinese letter, expressive of his gratitude and thanks to Mr. Colledge, is represented in the act of delivering it. In the background, upon the floor, is seated a man with his eyes bandaged, who had also been operated upon for a cataract, waiting his turn for Mr. Colledge's attention. . . .

(158) See Ljungstedt's pamphlet and Chinese Repos., Vol. III, p. 489.

(159) April 16, 1831 (Vol. II, No. 398).

(160) Thomson, Chinese Recorder, Vol. XVIII, p. 431.—The original of the painting is in England. One of the engravings made from it by William Daniell, R. A., graces the Canton Missionary Hospital.

Before continuing our narrative we may dwell upon a pleasant episode: According to Hunter's "Fankwai at Canton" (161).

1833 was a notable year, for the hitherto unprecedented event of the marriage at Macao of a young American lady, Miss Shillaber of Boston, to Dr. Thos. R. Colledge of the Company's Factory. It was a brilliant affair and celebrated with more than usual eclat from its novelty.

Remarkable as Colledge's endeavours for the Chinese poor at Macao were they form but a portion of the benefits conferred by him. The next to be considered was the opening, with the assistance of Dr. Bradford, an American physician hailing from Philadelphia (161), of a free dispensary at Canton (A.D. 1828). Sir A. Ljungstedt has left an enthusiastic description of this institution serving Chinese of both sexes as well as foreigners. Big crowds of sufferers from all sorts of diseases were relieved (162). The work was later carried on by Bradford and Cox, Assistant Surgeon to the Company, and it appears that the institution existed until the impending Anglo-Chinese war necessitated the evacuation of the Britishers from Canton to Macao. The only drawback of this most useful institution was that it was impossible to admit in-patients.

Though not strictly proceeding in chronological order we may with advantage deal now with the services rendered by Colledge to the foreign sailors, dwelling at the same time upon previous efforts made on their behalf.

The fate of the seamen coming out to China in those early days was certainly not an enviable one. Scurvy, often complained of in Morse's annals for the 18th century, appears to have been not so conspicuous early in the nineteenth. Conditions in Canton remained the same, however, with a high morbidity and even mortality from malaria and dysentery mainly. A further source of trouble and illness was the illicit sale of liquor to the crews. Under these circumstances the need for an establishment to hospitalize the sick sailors was early felt and in the year 1793 we see Ambassador Lord Macartney applying to the Canton Viceroy for permission to erect a Hospital for Seamen on Danes Island (163). The demand, which was against all rules and precedent, was turned down.

This question was again taken up in 1825 when the Court of Directors expressed to the Committee their concern in regard to the

(161) Quoted by Thomson, Ch. Med. Miss. JI., 1888, p. 101.

(162) Ljungstedt particularly dwells upon the case of a young tailor who had "become enamoured of a wretched being, whose charms his father most peremptorily and justly forbade him to enjoy." In his desperation the young man swallowed "a drachm's weight of the strongest opium." His friends brought him to the dispensary where he was saved with the aid of the stomach pump.

(163) Morse, l.c., Vol. II, p. 253.

numerous deaths occurring during the stay of the ships at Whampoa. The suggestion was added that the ships should not go up above Second Bar until October was well on. The Committee decided, however, to attempt the establishment of a hospital on Danes Island or of a floating one near the Brunswick Rock. The steps taken in this direction remained fruitless (164).

In 1829 the Committee had under consideration the policy of keeping the ships outside the river "until the back of the summer was broken and the danger of malaria and dysentery was reduced." It can be seen, however, that they were not so much anxious to act upon the humane advice of the Court of Directors as trying to use the delay of the ships as a weapon to enforce their demand for bringing the number of Hong merchants up to the old standard, thus avoiding a monopoly enjoyed by too few.

Lord Napier, who as Chief Superintendent of the British Trade in China was from 1834 in charge of the duties formerly exerted by the East India Company, seems to have taken a real interest in the welfare of the sailors. He expressed to Dr. Colledge the wish to receive suggestions as to how the services of the medical officers "may be made most advantageously available to British subjects in China." Colledge submitted a long report which was reprinted by Sir A. Ljungstedt.

Here it is noted that Lord Napier had already agreed to station a medical officer at Whampoa. And, since he had necessarily to reside on board a ship. Colledge urges that a floating hospital be combined with his residence.

He further points out that the opening of the trade has in certain ways aggravated the situation. Formerly each ship of the Company carried two medical officers. These not only looked well after their own patients but readily responded to calls from ships not carrying surgeons. Now vessels will be principally employed which, from their size and complements of men, will not be obliged by act of parliament to carry a surgeon and none will have more than one medical officer. Thus the number of medical men assembled at Canton and Whampoa will be materially reduced and try as they might they will often be unable to respond to outside calls. The gap thus created would be most efficiently filled by the medical officer to the Superintendents permanently stationed at Whampoa if he has a floating hospital at his disposal.

Colledge further emphasizes the importance of medical establishments at Macao or Lintin. He points out that while conducting his hospital at Macao he had never experienced any interference either from the Chinese or Portuguese governments and that, though the establishment was principally intended for the relief of poor Chinese, he has occasionally admitted "cases of professional interest occurring among the lower orders of foreigners resorting to this country." Ships continue to come in from sea in a sickly condition. At Lintin at present no medical aid whatsoever is available while Macao, though possessing at present a resident medical officer, lacks of a hospital. Dr. Colledge hopes, that if such would be installed at Macao or Lintin, it could be maintained by charges made to the shipmasters.

The only drawback of the scheme is in Colledge's opinion that there would be no medical attendant left to the superintendents at Canton.

In a remark attached to the reprint of the above letter in the Chinese Repository (165) the urgency to provide for the sailors numbering more than 6,000 during the year is stressed. The amount of sickness is considered as appalling; one large ship for instance had 20 deaths while in harbour. American masters especially, who had no surgeons with them, sometimes turned their sick men adrift on shore.

It is added that immediately after Colledge's report was received steps were undertaken to realize the plan of a floating hospital but met with no immediate success. The prospects for a hospital at Macao were brighter since according to a British law the Crown was prepared to give an amount equal to that subscribed locally. Two meetings were held in 1835 which resulted in the foundation of the British Seamen's Hospital Society in China (166). It was probably due to the influence of Colledge, who played a leading part in this undertaking, that a rule was adopted, according to which

any Chinese indigent persons, soliciting medical aid shall be relieved, as far as the funds of the establishment permit, gratis.

The first report of the society (167) stated that, while no floating hospital was yet available, the services of the Assistant Surgeon to the Superintendents were gratuitously put at the disposal of the society. Accordingly Dr. Anderson was stationed during the summer at Lintin, while Dr. Colledge remained at Macao, where probably a hospital for foreign sailors had been installed by then. Further an arrangement was made according to which Mr. Johnstone, surgeon of the "Earl Balcarras," was employed to visit during her stay at Whampoa all vessels requiring medical assistance. It would seem that soon afterwards a floating hospital was created for it is mentioned (168) that in November 1836 Mr. H. Holgate was appointed to take charge of the British Seamen's Hospital at Whampoa.

The next information we would procure (169) is that in June, 1838, the Hospital Ship "Hope" (170) had to be removed and broken up because it was alleged by the Chinese authorities that it was made use of to facilitate the operations of the opium fleet. A later record (171) denies this story saying that the real cause was a quarrel between the Governor and Hoppo (Head of Customs).

In 1841 Mr. Heerjeebhoy Rustomjee gave the amount of \$12,000, the interest of which was to be used for the accommodation of sailors

(165) Vol. III, p. 375.

(166) Thomson, China Med. Miss. JI., 1838, p. 41.

(167) Chinese Repos., Vol. V. p. 274.

(168) Ibidem, Vol. XI (1842), p. 195.

(169) Ibidem, Vol. VII, p. 151.

(170) Ibidem, Vol. VI, p. 400.

(171) Ibidem, Vol. VII, p. 480.

in the foreign hospital run by Dr. Anderson at Macao. Alternatively a special establishment might be founded at Hongkong (172).

Dr. Anderson reported in 1843 (173) that a Seaman's Hospital at Hongkong was by then ready to receive patients. It had been erected on a lot granted by the Government and possessed accommodation for fifty patients. Dr. Young was appointed honorary surgeon. To out-patients a small charge for medicines only would be made while the rates for in-patients were \$1.50 in the case of officers and half that amount for seamen. The hospital for foreign seamen at Macao was closed at the same time.

The true significance of Colledge's work lies not so much in the direct boon conferred by the humane undertakings instituted by him as in the indirect influence they exerted. How inspiring his example was is proved by Sir A. Ljungstedt's pamphlet where a passionate appeal is made for more medical workers to be sent to China:—

If I had the means, I would send a host, an army of philanthropic surgeons into this empire; feeling entire confidence in their success, I should go down to the grave with bright and consoling hopes, that within a quarter of a century my expectations would be realised; and that the great barriers, ignorance and prejudice, which now exist, would be swept away and not a vestige remain. . . .

England in her glorious munificence sends forth millions of wealth for religious and other charities; where, and in what manner, could a moiety of her benevolence be so well, so usefully and profitably bestowed in national and philanthropic points of view, as upon this portion of the human race by medical men? They would shortly clear the way for religion, the arts and sciences, and their attendant train of blessings.

Colledge's own views upon this matter are lucidly expressed in a pamphlet published at Macao in 1836 (174), the most significant part of which may with advantage be quoted;—

What I should wish to suggest is, that those societies that now send missionaries, should also send physicians to this benighted race who on their arrival in China should commence by making themselves acquainted with the language; and in place of attempting any regular system of teaching or preaching, let them heal the sick and administer to their wants, mingling with their medical practice, such instructions either in religion, philosophy, medicine, chemistry, etc., as the minds of individuals have been gradually prepared to receive. . . .

Modestly deprecating the part he took in early directing attention to this aspect he

rejoices that the same ideas had suggested themselves to the pious and the benevolent in the United States, as appears from the fact of the Rev. Dr. Parker having qualified himself to labour in this great field both as physician and minister of the gospel. . . .

(172) Ibidem, Vol. X (1841), p. 479.

(173) Ibidem, Vol. XII, p. 441.

(174) Suggestions with regard to Employing Medical Practitioners as Missionaries to China, Macao, impreso for F. F. da Cruz, Typographia Feliciano, 1836.— See also Chinese Repos., Vol. IV, p. 386.

There is no doubt, however, that Colledge's work and early writings had considerable influence in directing the attention of missionary circles in America and England upon the desirability of employing medical missionaries as pioneers in China(175).

The first missionary body which practically adopted "the idea of making the practice of medicine an auxiliary in introducing Christianity to China"(175), was the American Board of Commissioners for Foreign Missions.

This society had started work in China in 1830, the first missionary sent out by them being Elijah C. Bridgman, who sailed together with David Abeel (under the American Seaman's Friend Society). The attention of the Board had been drawn to China by D.W.C. Olyphant(176), a Canton merchant of so earnest religious convictions that his rooms in the Canton factories were dubbed "Zion's Corner" (Latourette, 176). He granted free passage to these two as well as subsequent missionaries, including the Rev. Dr. Peter Parker, the first Protestant Medical Missionary sent out to China.

This great man, of whom it was truly said that "he opened the gates of China with a lancet when western cannon could not heave a single bar"(177), was born at Framingham in Massachusetts in the year 1804 and graduated at Yale both in theology and medicine. Appointed by the American Board of Commissioners for Foreign Missions he left New York on board the *Morrison*, a ship belonging to Mr. Olyphant, in the company of that gentleman, and arrived at Canton on October 26, 1834, after a journey of 143 days (Thomson-177). Soon afterwards (December) he left for Singapore to study the Chinese language. There he opened a dispensary for Chinese where more than one thousand patients were treated from January 1 to August 1835.

Returning to Canton he opened on November 4 of the same year a hospital and dispensary in Factory No. 7, Fungtai Hong, San-taulan Street, a site quite near the foreign factories. Much help in the difficult search for a suitable building was given by Mr. Olyphant. Deploring the death of this benefactor in his report for 1850 and 1851 (issued 1852) Dr. Parker said that Olyphant's

efforts to obtain a place for the Hospital will not soon be forgotten, an object rendered difficult of attainment by the jealousy of the Chinese and their aversion to foreign innovation. After many and long trials he obtained the house that has been the theatre of its operations to this day. . . .

(175) That is expressly testified by Lockhart, l.c., p. 122.

(176) See Latourette, l.c., p. 217; *A Century of Protestant Missions in China*, Shanghai 1907, p. 251.

(177) Rev. Dr. Beadle, quoted by Thomson, *Chinese Recorder*, Vol. XIX, p. 231; Cadbury and Jones, "At the Point of a Lancet," Shanghai, 1935, p.29.

It was fortunate that the building belonged to Howqua (his real name was Wu Tunyuen (伍東源—178), the richest of the Hong merchants and the only one who had other than strictly business relations with Westerners. For he waived the rent which had been settled at \$500.00 per annum, after the first year.

In Parker's first quarterly report(179) he mentioned that the building had on the second floor a large room, where 200 patients could be comfortably seated and prescribed for; in addition, the house afforded shelter to at least forty in-patients.

Though it was planned to admit cases of all kinds if they were of "peculiar interest and praise," it was assumed that a single class of patients would furnish more than enough work. Probably upon Colledge's advice(180) eye diseases were chosen, because they were most common and the native practitioners were usually helpless against them. Parker himself thus described the first days of his activity(181):—

It was after long effort that a place was found for a hospital, and when at length a suitable building was rented and previous notice had been given, on the first day no patients ventured to come, on the second day a solitary female afflicted with glaucoma came, the third day half a dozen. . . .

These initial difficulties were soon overcome. At the end of the first quarter he noted(182):—

When it was the practice to admit patients daily, I observed some of them with lanterns, with which they left their homes at two or three o'clock in the morning, in order that they might be there in season; when the days of admission were limited, they sometimes came the previous evening, and remained all night, that they might secure a ticket in the morning. . . . When obliged to close the doors against new admissions, persons from a distance would avail themselves of the influence of some foreign gentleman, or Hong merchant, to intercede for them.

No opposition has been excited, but on the contrary I have been often assured that the hospital was known and approved by the officers of government. With but rare exception, unqualified confidence has been manifested by the patients. A woman of Mohammedan faith, sixty-five years of age, who had cataract of both eyes, when I expressed a doubt whether she could bear to have the knife put in her eye, replied, "if you like, you may take them both out and put them in again."

The confidence Parker's hospital enjoyed is best proved by the fact that many female patients attended; in the first quarter they formed almost a third of the total (270 out of 925).

The foreign merchants residing in Canton not only took great interest in Parker's work by contributing liberally to its modest

(178) Chinese Repos., Vol. XII, p. 500; Cadbury and Jones, l.c., pp. 8, 37.

(179) Chinese Repos., Vol. IV, p. 461.

(180) Ibidem, Vol. X, p. 21.

(181) Report of the Med. Miss. Soc., cont. an Abstract of its History, etc., Macao, 1843.

(182) First and second Reports of the Med. Miss. Soc. in China, Macao, 1841.

needs (the expense for the first quarter was \$454.84 and the total for the first year only \$1,733.70 though free board was granted to poor patients) but also visited the hospital, and some actually assisted Dr. Parker in his operations(183). Notable among the latter was Mr. W. Jardine, who—though he had given up his original profession of ship surgeon to the East India Company—was ever ready to lend Parker all the assistance he could(184).

In spite of this and the ready help from his professional brethren (rendered both by the resident doctors, specially Dr. Cox, and by ship surgeons whenever in port) Parker felt from the beginning the need for permanent assistance. His helper during the first quarter was a young Chinese born at Malacca and educated at the Anglo-Chinese College, who, however, soon afterwards left for Singapore. A European, employed in turn, went home and Parker complained in his second Quarterly Report(185) of being left with untaught Chinese helpers. He added that

it would be very much to the efficiency of the institution, if the constant services of a few well-educated native youths, anxious to become masters of the healing art, and prepared to go through a thorough course of instruction, could be secured. . . .

This desire was soon fulfilled, for by the end of the year 1836 Parker secured the services of Kwan Ato (關阿杜) (1818-74), a nephew of the famous painter Lamqua (林華) (pupil of Chinnery). Dr. Parker was under great obligations to this Chinese artist who painted the more interesting cases at the hospital "and uniformly said, that as there is no charge for 'cutting' he can make none for painting"(186).

Reference not only to Kwan Ato but to the starting of a regular medical class is made in Parker's seventh report for the period May 4 up to December 31, 1837:—

The importance of training young men for the medical profession in China was early felt, and I am happy to state, that three youths, of good promise, of the age of 16, 17 and 19 years, are now connected with the hospital. They have made respectable proficiency in the English language, and are of valuable assistance in compounding medicines, and administering the prescriptions.

(183) Kerr, *China Med. Miss. J.*, 1896, p. 55.

(184) Mr. Jardine is said to have taken a notable part in one of the first important surgical operations performed in the Canton Hospital. It is stated that the patient in question refused at first the urgently necessary amputation of his arm but gave in when Jardine made him a gift of \$50 (*Annual Report for 1916*, p. 63). Balme (*l.c.*, p. 43) adds, that this event took place in 1836 and that Parker performed the operation (a disarticulation through the shoulder-joint for osteosarcoma of the humerus) in one minute, the patient recovering in less than a week. Cadbury and Jones are somewhat inclined to consider this story as a legend.

(185) *Chinese Repository*, Vol. V. p. 32.

(186) 6th Quarterly Report.

The eldest (Kwan Ato) is a responsible and active youth, and besides his tuition, receives \$5.00 per month wages. Some minor operations upon the eye, as for entropion and pterygium, he has dexterously performed; he has served now more than a year.

The second is the farthest advanced of the three, in his own language, having been designed for a literary life, till the death of his father (who held an office in government), more than a year since, deprived him of the means of pursuing his studies. He is partly sustained by the Morrison Education Society.

The third, who is a young man of good talents, is wholly supported by his father, and is to remain at least five years.

It can be gathered from the above and other records(187) that the theoretical instruction Parker gave in addition to practical training to his pupils was mainly in the English language.

The next event vying in importance with the opening of the Canton Missionary Hospital and the beginning of medical education was the foundation (in 1838) of the Medical Missionary Society in China, the first organisation of its kind in the world.

The history of this Society, which owed its inception principally to Dr. Colledge(188), goes back to October, 1836, when he and Dr. Parker together with the Missionary Bridgman (founder of the Chinese Repository in 1832) published at Canton

Suggestions for the formation of a Medical Missionary Society offered to the consideration of all Christian nations, more specially to the kindred nations of England and the United States of America.

In this loftily written appeal the proposers said:—

Viewing with peculiar interest the good effects that seem likely to be produced by medical practice among the Chinese, especially as tending to bring about a more social and friendly intercourse between them and foreigners, as well as to diffuse the arts and sciences of Europe and America, and in the end introduce the Gospel of our Saviour in place of the pitiable superstitions by which their minds are now governed, it was resolved to attempt the foundation of a society to be called "The Medical Missionary Society in China."

The object in view was not to appoint and to bring out any medical missionaries but to receive and assist those sent out by the home societies, so that their services might be made immediately available while they might be put in the way of learning the language. The necessity that those to be appointed must be specially qualified was emphasised; those in work must not receive any remuneration. While the Society's agents would make every endeavour to spread the Gospel they

(187) See for instance Lockhart, l.c., p. 138; Thomson, *China Med. Miss J.*, 1838, p. 101.

(188) The 1843 Report of the Society (181) speaks in this connection of "Dr. Colledge, whose philanthropic zeal . . . originated the ideas that are now being carried out" while the Rev. G. T. Lay said that the Society was "founded upon principles first conceived by Colledge, the Chinaman's friend, and afterwards successfully put in practice by himself and Dr. Parker" (quoted by Thomson—178).

should beware of depreciating other truth. All the truth is of God; the introduction of medical truth into China would be the demolition of much error.

The promoters of the Society had indicated their readiness to receive sums donated towards its foundation. Their appeal was not in vain for by May 11, 1837, subscriptions to the amount of \$5,230 were acknowledged in the "Canton Register" (187). However, as noted in Dr. Parker's 7th Quarterly Report (May-December, 1837—189) the organisation of the Society was delayed "through unanticipated causes."

The Medical Missionary Society in China was actually inaugurated at a meeting held under Mr. Jardine's chairmanship in the rooms of the Canton General Chamber of Commerce on February 21, 1838. On the motion of G. T. Lay (who attended on the part of Dr. Colledge), seconded by the Rev. E. C. Bridgman it was resolved:—

That in order to give a wider extension, and a permanency to the efforts that have already been made to spread the benefits of rational medicine and surgery among the Chinese, a Society be organised at Canton, under the name of "The Medical Missionary Society in China;" that the object of this Society be, to encourage gentlemen of the medical profession to come and practise gratuitously among the Chinese, by affording the usual aid of hospitals, medicine and attendants; but that the support or remuneration of such medical gentlemen be not at present within its contemplation.

Further resolutions adopted were on officers, members (190), meetings, foundation of a Library and Museum, qualifications and duties of the medical men to be employed and other necessary details of administration.

Thanks were expressed to Drs. Colledge and Parker for their services on behalf of the Chinese which tended to originate the society, and the hope was added that they would continue to carry its purposes into effect. Dr. Colledge's efforts to purchase and put into repair a most suitable building for the society's operations at Macao were likewise gratefully acknowledged.

The meeting then elected Dr. Colledge (though absent) to the office of President. He continued in it upwards of forty years, or until his death at Cheltenham, England, in 1879. When reminded on his deathbed of the share he had taken in the foundation of the Missionary Society, he repeatedly said: "That was the one good thing of my life."

(189) This report deserves the name of a "quarterly" insofar, as two months were spent by Dr. Parker upon the voyage to Japan mentioned in the chapter on vaccination, while the hospital was closed during a further month owing to illness of the doctor. It was reopened on October 1st.

(190) The dues were: \$15 annual subscription; \$100 for membership and \$500 for directorship for life.

Dr. Parker, W. Jardine, G. T. Lay and Reverend E. C. Bridgman were made Vice-Presidents, A. Anderson, Colledge's assistant and successor as surgeon to the Superintendents of British Trade, Recording Secretary. Among the members we find the names of many business men, some very prominent in after years. The only Chinese member for many years was Howqua, ever a generous helper of Parker's work.

At a meeting of the Committee on February 23, R. Inglis and Dr. Anderson were added to the number of vice-presidents and J. R. Morrison was appointed Recording Secretary. The three founders were charged at the same time with the task of drawing up a general statement "of the objects and prospects of the Society."

This address was submitted at a public meeting on April 23, 1838, with Dr. Parker in the chair. It said among other things:—

"Heal the sick" is our motto,—constituting alike the injunction under which we act, and the object at which we aim.

While the original suggestions had recommended to the home societies

not to neglect to encourage pious and well-disposed young men to accompany the missionaries, with a view to becoming dressers and apothecaries, and to render themselves useful in the supervision of the internal concerns of the hospitals,

this was now considered unnecessary on account of "the readiness of native youth to serve in the hospitals as dressers"(191). Great stress was laid upon a careful education of the Chinese assistants. For

young men thus instructed will gradually be dispersed over the empire. . . . and will dispense the benefits of a systematical acquaintance with the subject whithersoever they go. The success of their measures will render them respectable, and of course will redound to the credit of those also from whom they learned the art. Their patients will not only hear, but feel that the people from the West are good men. The effect of such influence will be silent but powerful; for there is something irresistibly impressive in benevolent action, especially when it appears exempt from the imputation of interested motives.

Another aspect emphasised in the address were the benefits likely to accrue to medical science from observations in China, in the domain of nosology as well as *materia medica*.

The earliest practical step adopted by the Society at the same meeting was to send Dr. Parker, during the time in which the Canton Hospital underwent extensive repairs, to Macao to carry on hospital work. As already alluded to, a desirable property had been acquired there by Dr. Colledge on his own responsibility. This, being worth \$20,000 but sold by Messrs. Dent & Co. for less

(191) The Medical Missionary Society in China, Address with Minutes of Proceedings, Canton, 1838. See also Chinese Repos., Vol. VII, p. 32.

than a quarter of this amount, comprised a substantial, two-storied building, capable of accommodating 200 patients. It was situated in spacious grounds in a pleasant situation overlooking the inner harbour(192).

Over 700 patients were treated in this establishment during the period July 5 to October 1, when Parker had to return to Canton and the hospital had to be closed temporarily for want of a medical officer. The number of important surgical cases had not been quite so big as in Canton but prospects in Macao were promising, the more so as there appeared to be excellent facilities for medical training.

The fateful year 1839, when the troubles leading to the first Anglo-Chinese war became threatening, saw the arrival of three more medical missionaries, two of whom were destined to play most important parts in the introduction of western medicine.

The first of these was Dr. William Lockhart, who was born in Liverpool on October 3, 1811(193) and studied at Guy's Hospital, London. Commissioned by the London Missionary Society he arrived at Canton in January, 1839(194). The Macao Hospital, left vacant since Parker's return to Canton, was placed under his care at the end of February. Bent upon language studies Lockhart at first saw only urgent cases. On July 1 the hospital was formally opened but then also only a limited number of patients amounting to 167 were attended to. In the middle of August the "departure of all natives from his premises virtually closed the hospital" and towards the end of the same month Lockhart was compelled to leave in common with his countrymen and to embark on board ship. Since after half a month his prospects did not become better he retired temporarily to Batavia, studying the Chinese language under the Rev. Medhurst(195).

After Dr. Lockhart had left Macao, the Rev. Bridgman took charge of the hospital, residing there with the two recently arrived medical missionaries. One of these was William Beck Diver, M.D. from Philadelphia, sent to China by the American Board of Commissioners for Foreign Missions. The other, Benjamin Hobson,

(192) First Report of the Med. Miss. Soc. Hospital at Macao; Chinese Recorder, Vol. V. p. 368; Thomson, *ibidem*, Vol. XIX, p. 76.

(193) A Century of Protestant Missions in China, p. 661.

(194) It is often stated that Lockhart arrived in 1838. In his book (p. 125) he expressly states having reached China in January, 1839, the date we prefer.

(195) Hospit. Rep. of the Med. Miss. Soc. for 1839. See also Chin. Revers., Vol. VIII, p. 624.—Brayton Barff mentions that Lockhart, while at Batavia, practised medicine among natives and immigrant Chinese. Though probable, this found no confirmation in available original sources, including Lockhart's book.

M.B., M.R.C.S., had been born in 1816 at Welford, Northamptonshire, and was a graduate of University College, London. Accompanied by his family he came out under the London Missionary Society.

From Hobson's Report on the Medical Missionary Society's operations at Macao in 1840 and 1841(196) it appears that the two newly-arrived doctors only occasionally gave out medicines until the establishment was reopened on August 1, 1840, by Dr. Lockhart, who had returned from Batavia on June 23 of the same year(195). Drs. Diver and Hobson who had by this time been formally accepted as medical officers to the institution, assisted him at first and took joint charge at the end of the month when Lockhart removed to Chusan. Dr. Diver left in December, 1840, on account of ill-health so that Hobson alone had to carry on the work.

It seems that in 1840-41 not many in-patients were admitted to the Macao Hospital, both on account of the general disquietude and because much energy of the doctors was absorbed by language studies. Those taken in were mainly poor people to whom money was granted to buy rice and fuel. Hobson, becoming acquainted with the opium evil, mentions that

its baneful influence is insidious but certain; and its moderate indulgence, if means permit, lays the foundation for its continued and increasing use.

The scope of the work was considerably increased during the period July, 1841-October, 1842, when 5,265 new patients were seen and 433 in-patients admitted. Hobson's report on this time(197) contains much valuable information. Like Dr. Parker he early tried to train Chinese assistants to whom he refers thus:—

Besides the regular visits of the surgeon, the in-door patients have the constant attendance of native assistants. One of these, called Atsung, first came under my notice in April 1840. Though a young man, he was then an opium-smoker of seven years' standing, and much reduced both in his property and health. I promised to cure him of the habit, and to give him employment. Having been recovered from this dangerous vice, and being found active and ingenious, and moreover acquainted with three dialects, his services were engaged in the dispensary.

In July, 1840, he accompanied Dr. Parker to America, and after being kindly instructed in many points, with benefit to his mind, he returned to Macao in March, 1842, and has remained here since usefully occupied.

The younger one Apun, aged 19, has been with me for a year and a half; he has a good native education, and possesses now a respectable knowledge of English.

Both of these are young men of talent, and bid fair from the favourable opportunities that they enjoy, to become better acquainted to modern views, than any of their countrymen. They are receiving instruction daily in all the elementary branches of medicine, natural theology and religion, and with the blessing of God they will ere long prove benefactors to their country.

(196) Appended to the 1st & 2nd Reports of the Society, Macao, 1841.

(197) See also Chinese Repos., Vol. XI, p. 659.

Not less interesting are Hobson's nosological remarks. Lung tuberculosis, though having its victims in China he thinks "slower in its progress and less frequent than with us." He also assumes that the Chinese in common with other Eastern nations

are peculiarly exempt from those acute inflammatory diseases of the viscera, which annually destroy such multitudes of our countrymen.

As "dreadful scourges" he enumerates "famine, small-pox and cholera, with which they are occasionally visited" as well as the increasing evil of opium smoking. In general, however, "there appears to be a fair proportion of health in China."

Leprosy was met with according to Hobson's information in Kwangtung, Kwangsi and Fukien Provinces only—as the Chinese think, because these areas are lower and more damp than the other parts of the empire. Leprosy

is regarded with horror as an incurable and contagious disease. In Canton, there is a lazar house supported by the government, and capable of holding several hundred persons(198). It is chiefly used as an asylum for poor out-cast lepers, who receive daily small allowances of rice for their support, but are permitted at the same time to wander about the streets to the great annoyance of shop-keepers and passers by, from whom they solicit alms
.....

Leprosy is regarded as so unclean and contagious a disease, that when a family or a branch of a family is infested with it, it shuts them out from all direct intercourse with their relations and friends. Thus a father banishes his child, and the children their parent, for they dare not eat or live with him, lest they also should be contaminated; and thus these poor creatures are avoided by all and pitied by none.

Besides the lazar house, there is a part of the city appropriated for the lepers, who there live and trade together, not daring to inter-marry with others.....

Leprosy is undoubtedly an hereditary disease, but whether it is really contagious I cannot determine. The Chinese affirm that it is, and act accordingly. It is said to become mild in the third generation, and to run itself out in the fourth.

A child may become leprous when the parents are apparently free from any taint, and it is therefore a matter of great importance and anxiety to determine this point. The common mode of doing this, is to call in one of the police connected with the lazaretto, who from long experience is qualified to judge.....

In September, 1842, it was resolved to sell the Macao property as it was thought desirable to have the establishment in the newly-acquired colony of Hongkong rather than in the Portuguese settlement. The Macao Hospital was actually closed in January, 1843 (181, 199).

As already mentioned, Dr. Lockhart left Macao at the end of August, 1840, bound for Chusan, the occupation of which island by

(198) This establishment had in 1832 341 patients and a yearly expenditure of Tls. 300 (Milne, Chinese Repos. Vol. XVI, p. 14).

(199) Lockhart, l.c., p. 126; Hobson's Report, June 1844 (Chin. Repos., Vol. XIII, pp. 369-382).

the British seemed to offer suitable opportunities for medical missionary work. Settling down at Tinghai he at first met with some difficulties, as the people did not understand the purpose of the work. However,

the attention paid to some sick that were met in the streets, and explanations made to others that medicine would be given for their ailments, had the effect of removing this feeling of doubt, and shortly the utmost eagerness was shown in seeking for assistance(200).

An average of 100 patients, sometimes even 200, attended daily, coming mostly from other settlements on the island and even from the mainland. Contrary to experiences at Canton and Macao "a larger number of persons afflicted with fever and other diseases, generally classed as medical applied for relief"(181). This is not surprising as, besides dysentery, malaria was rampant in this rice-cultivating territory and the inhabitants soon learnt to appreciate the therapeutic effects of quinine. Several Chinese practitioners applied for the drug and brought their friends(201).

In addition to the inhabitants, Lockhart attended the members of the Chinese Coolie Corps from the Canton District, which had been formed as a service detachment to the British army (Brayton Barff). The British troops themselves, among whom malaria and dysentery made terrible ravages, were cared for in regimental hospitals(202).

Dr. Lockhart continued at Chusan until February, 1841, "when the withdrawal of the British troops made a longer residence impracticable"(199). He therefore returned to Macao where until the end of the war he assisted Dr. Hobson, specially by seeing out-patients three times weekly(197).

Before considering the post-war activities of Lockhart and Hobson we must see how the Canton Hospital fared during the hostilities. Dr. Parker continued to work without any hindrance up to March 23, when all foreigners "were deprived of their servants, and in a manner of their liberty"(195). The few indoor patients were asked to remove by the Senior Hong Merchant "acting either under order from the high officers, or in expectation of such order, and in fear of reprehension" and the hospital was closed. After a while the officers on guard around the factories began to seek medical aid and also admitted men of rank to Dr. Parker's house. The number of patients seen in this way gradually increased when the troops had been withdrawn and the foreigners

(200) Lockhart, l.c., p. 125.

(201) Report of the Med. Miss. Soc. Operations at Chusan in 1840-41, appended to the 1st and 2nd Report of the Society, Macao, 1841.

(202) Chin. Repos., Vol. X. p. 497; Vol. XII, p. 161.

released, so that some better arrangements became necessary. The Senior Hong merchant seemed unwilling to have the former building reopened. The removal of the English portion of the community to Macao together with their medical attendant had left vacant the Canton Dispensary. Dr. Parker removed therefore in August to these premises where he continued to see patients until June 17, 1840(203) by which time a total of more than 9,000 had been relieved. On the closing day

about 200 patients and their friends were present; and when those, who had come for the first time understood the hospital was to be closed for a time, they fell upon their faces, and knocking heads upon the ground, with tears entreated that they might be healed(195).

An attempt to reopen the hospital was made by Dr. Lockhart during the occupation of Canton by the British forces in April, 1841, but Howqua refused his building and it did not seem wise to obtain a new house(204).

About three weeks after the Canton dispensary had been closed in June 1840, Parker, with the approval of the Society, left China, not so much to recuperate his health as to preach the cause of medical work to America and England. His hope was to raise a permanent fund for maintenance and enlargement of the Society's operations, as well as the education of Chinese pupils. He was, as we have seen, accompanied to America by Hobson's pupil Atsung and also took with him a collection of paintings of remarkable cases, showing both the condition of each malady and the appearance of the patient after cure, donated by his admiring friend, the painter Lamqua. These he afterwards presented to Guy's Hospital Museum in London and Yale University in the United States.

Ample information on Parker's journey is contained in a report to the Medical Missionary Society written soon after his return to China in October 1842, which was fortunately embodied in a report of the Society(205). Here he describes how he held the first public meeting of medical men in the Washington Medical College in March 1841, with most encouraging results. He then preached before the U.S. Congress dwelling upon the conditions in China and the prospects of the Medical Missionary Society there. Dr. Parker addressed other congregations and assemblies in Washington as well as other parts of the United States in a similar manner. Special mention is made in his report of the Medical Colleges in

(203) *Ibidem*, Vol. XIII, p. 239.

(204) 1st and 2nd Rep. of the Med. Miss. Soc., Macao, 1841.

(205) Report of the Medical Missionary Society, containing an Abstract of its History, etc., Macao, 1843.—This as many other early reports was kindly lent by Dr. J. L. Maxwell.

Baltimore and New Haven and of a meeting of the Medical Faculty in New York.

In Boston a committee was appointed consisting of Drs. Jackson, Warren, Shattuck, Hooper and Bowditch

to consult with any persons who may take an interest in the subject of the medical establishments in China and to take such measures as may seem to them expedient to obtain the aid required.

Immediately after the meeting in New York and Boston, on April 17, 1841, Dr. Parker embarked for England. Here the soil had been well prepared. In 1838 already Sir Henry Hallford, President of the London College of Physicians, had recommended the Medical Missionary Society in an address read before the College and attended by prominent laymen(206). A "Medical Philanthropic Society for the Support of Medical Missions in China and the East" was afterwards organised, the prospectus of which appeared in 1840(207). Much help could be expected, and was actually received, from men like Sir George Staunton, Dr. Colledge and others who had returned home from China. Sir H. Halford showed continued interest and was instrumental in introducing Dr. Parker to many persons of rank and influence, among them the Bishop of London who—while praising the Society's labours—found it impossible to co-operate.

To broadcast information about the work in China, Dr. Parker published during his six weeks' stay in London a "Statement respecting Hospitals in China"(208). A public meeting was held at Exeter Hall on July 15, 1841, with Sir George Robinson, former Chief Superintendent of British Trade in China in the chair, where favourable resolutions were proposed by Dr. Wm. Jardine, M.P., and others. A provisional committee was formed, followed later on by the organisation of a Ladies' Association at Hackney.

Parker then made a tour through England and Scotland, preaching the cause in several cities. At Edinburgh a public gathering at the Waterloo Hotel was presided over by the Lord Provost and attended by the most prominent citizens. A committee was formed to carry out the resolutions of this meeting and later on a Medical Missionary Society formed under Dr. Abercrombie who had from the first shown great enthusiasm. A ladies' meeting was likewise addressed by Dr. Parker and promises of help obtained.

(206) See Parker's 1st Report on the Macao Hospital.

(207) See Chinese Repos., Vol. X, p. 21—Here much praise is bestowed upon Mr. Lay who had made good his promise to work for the Med. Miss. Society after his return to England.

(208) This, preceded by a letter to Dr. John Abercrombie (describing Parker's progress in Great Britain) was republished by J. Maclehouse, Glasgow, in 1842 (pp. 32). See Chinese Repos., Vol. XII, p. 188.

At Glasgow an assembly was held at Garrick's Hotel, Dr. Parker being introduced by Mr. W. P. Paton through a letter from Mr. James Matheson, Canton. At Liverpool Dr. Parker evoked liveliest interest by alluding to the work of Dr. Pearson, formerly a resident of the city as well as to Dr. Lockhart who had "abandoned bright prospects among them." A General Committee was formed after several meetings had been held, of which it was said that

a more respectable and influential body, comprising the same number and embracing such different professions and religious denominations, could scarcely be elected in Liverpool.

Dr. Parker then made a brief visit to Paris and thus gained new friends for the cause in France. Before that he had met several German gentlemen who advocated the work after returning to their fatherland.

Back in America Dr. Parker learnt that the Boston Committee had been most successful, more than \$5,000 having been collected for the cause. He spent most of the winter at Philadelphia, where the "China Medical Missionary Society of Philadelphia" was formed. The constitution of this provided for annual meetings with addresses suitable to promote the work in China, further for pecuniary aid to assist the Society in China not only in its hospital work but also

in educating Chinese youth of talent in the healing art, in furnishing periodicals, and keeping this Society informed of the progress of the medical and surgical sciences, the improvements in instruments and surgical apparatus.....

In return for these efforts contributions to the *Materia Medica* were hoped for as well as paintings of remarkable cases and pathological specimens.

A "Ladies' Chinese Association of Philadelphia" was also formed. At one of the several meetings held in the city a large number of medical students of Pennsylvania University as well as other medical colleges were present, several of whom wanted to become medical missionaries in China.

Parker visited New York twice during the winter and repeatedly came in touch with its medical Faculty. At the first public meeting held at the Stuyvesant Institute many medical students were present to whom the "paintings of the more remarkable surgical cases were exhibited." A provisional committee for forming an auxiliary society was at the same time elected, the latter being actually organised at the second public meeting held at the Broadway Tabernacle.

The cause was also presented to cities like Baltimore, New Haven, etc., and Parker expresses the hope that these as well as unvisited places

will not be found backward to come to our aid, as the Society in China progresses, and Providence prepares the way for the expanding of its plans and designs, in giving to the millions of China, hospitals, retreats for the leper, and asylums for the insane."

The applications for pecuniary aid made by Parker were of a twofold nature, for contributions to the permanent fund on one hand, for annual subscriptions on the other. In general the latter form of support was preferred; at Philadelphia for instance there was such a financial crisis that even rich people had no ready cash in hand. However, it can be seen from a financial statement appended to the report that Dr. Parker, when he arrived in China, had a balance to the credit of the Society amounting to \$6,030. Moreover books, instruments and medicines had been bought in England and America as well as from Charrière in Paris.

In his report Parker turns now

to a subject of paramount importance—one which commended itself warmly to the friends of this cause both in England and America—the education in the healing art of Chinese youth of talent and promising character.

While he was in London, "this subject was brought prominently forward" by Mr. Chas. Aston Key, member of the Royal College of Surgeons, upon whose advice it was brought to the notice of the College. The interest which "that honorable and wealthy body" took is apparent in a letter to Sir George Staunton, dated September 3, 1841:—

Sir,—Your letter to Mr. Vincent, the late president, of the 21st of June last, enclosing and recommending to favorable consideration, a letter from the Rev. Dr. Parker, requesting the co-operation of this College, in sustaining the hospitals already established in China, and in founding others, and in any way consistent with the designs of this College, aiding in the education of a number of Chinese of talent in the healing art, has been laid before the Council.

And I am directed by the president, Mr. Guthrie, to acquaint you, that the Council is desirous of forwarding, in any feasible manner, the object of Dr. Parker's application, and will be ready to communicate with the Secretary of State upon the subject, if deemed expedient. At the same time I have to state the conviction of the president, that gratuitous surgical education may be guarantied to six or more Chinese youths, in some of the public hospitals of this metropolis, if any arrangement could be made for their care and support therein.

I have, etc.,

EDWARD BALFOUR,
Secretary.

Sir George Staunton, forwarding this letter to Dr. Parker, expresses confidence that direct communication with the secretary would receive immediate attention.

Most favourable results were also achieved in New York where at a meeting of the managers of the "Chinese Medical Missionary Society of New York" on May 20, 1842, it was resolved

that the managers pledge themselves to educate in this city, for the medical profession, three Chinese youths, if the Society in China shall deem it expedient to send them for that purpose.

Several donations were received for this specific subject both in England (\$400) and in America (\$1,022.55).

Parker then goes on to state that it was according to his wishes that the resolution of the New York Society was passed "with deference to the decision of the Society in China." For

the object of training up a band of able and scientific physicians and surgeons—that may serve as leaven to diffuse itself through the whole empire—is a settled principle; but the best mode of attaining this desirable object admits discussion.

If a proper medical college were available in China, there would be no doubt as to the best mode to be pursued, viz., to admit to it young men previously trained by the Morrison Education Society. Afterwards

individuals of distinguished talent and enterprise, independent too in their pecuniary resources, should subsequently spend a year or two in the hospitals of America, England or France, as is also the practice in the west. So educated and prepared, they would return to take the lead among those of their own country, whether it should be in practice, or in lecturing in the institution established.

Failing such facilities in China, it becomes a fair question if not suitable young men should be encouraged to study abroad. Even if other facilities should be speedily available in China

considerable time may elapse before the Chinese prejudice will so far yield to the light of science, as to admit of autopsies and anatomical dissections, which are so essential to the training of any to become enlightened and skilful practitioners in medicine and surgery.

An obvious advantage of this scheme would be the interest such intelligent Chinese students would awaken abroad thus being successful "in bringing China before the minds and understanding of those to whom it has hitherto been so much a terra incognita."

Among the objections to this scheme would be:

Firstly, the detriment the young men would suffer in their own language. (This, however, could be largely obviated by selecting well-advanced scholars). Secondly, as Dr. Parker quaintly, though not quite justly, puts it, "the temptations to which young men in our large cities would be exposed, especially as they are destitute of the restraints of moral and religious principles; and their liability to be injured by an injudicious degree of flattery and attention, which, from being objects of curiosity they might receive, and these evils enhanced, by the suddenness of the transition from the customs of the imperfect Asiatic form of civilisation, to the more refined manners, the freer and more familiar intercourse of different classes and sexes, the Christian and intelligent society of the west."

These dangers, however, could be obviated if a vigilant watch were kept over the young men sent out who "should even be denied a degree of liberty which to others might safely be allowed." Dr.

Parker expresses his conviction that both in New York and in London persons would be found who would willingly and carefully supervise the students.

Should the Society find it impossible to take decisive action in this matter which Dr. Parker, "in all its magnitude and disinterestedness, cannot contemplate with ordinary emotions," then its attention should be directed

to the establishment of a medical school in China, where a more systematic and thorough system of medical education may be afforded than is by any possibility to be given amid the multiplied labors of crowded hospitals.

Dr. Parker finally refers to the numerous applications he had received from would-be medical missionaries. Many of them were made "with an erroneous impression as to the character of the men the Society requires." Some applied out of medical interest alone, others wanted to bind themselves for four to five years only. And, though he came in touch with a few most desirable men he hesitated to enlist any on his own responsibility.

The committee, at a meeting held on March 27, 1843, expressed their thanks to Dr. Parker and resolved that the sum of \$5,286.32, subscribed in America for the Society's permanent fund should be held by the treasurer "until the sense of a general meeting be taken as to its future disposal." The same was to be done with \$400 collected for the specific purpose of educating young Chinese abroad. For the committee, evidently less sanguine than Dr. Parker, did not find their way to take immediate and decisive action in this matter. All that was resolved was that

the sanction of the committee be given to Dr. Parker to receive on probation a limited number of young men of respectable families, and who have already attained a considerable proficiency in the study of their own language.....That the management of their education during the time of their probation be left to Dr. Parker's judgment, with the recommendation of a diligent study of the English language being pursued, and that their fitness for being sent be left to the decision of the Society, or to a sub-committee appointed at a general meeting for that purpose.

The dissensions becoming manifest in the Society in 1845 undoubtedly forecast their shadows so that, as far as we know, no active steps were taken beyond those just mentioned.

Before concluding this chapter a few more events must be mentioned. Thus it is curious to note that in the year 1812 Dr. Warner, a missionary surgeon from Otaheite, had arrived at Macao where he stayed for a season with Dr. Morrison, intending to sail for Pulo Penang, Prince of Wales' Island(209). It does not seem that this medical missionary worked for the Chinese while at Macao.

(209) Morrison's Memoirs, Vol. I, 237, quoted by Thomson, Chin. Recorder, Vol. XVIII, p. 388.

Of greatest interest for us is the work of the Rev. K. F. A. Gützlaff (Netherlands Missionary Society) who—though not a medical man—

commended himself to the natives by the practice of medicine among them, having also adopted the native garb and assumed one of their clan names.

Gützlaff, after having studied some years under the Rev. Medhurst at Batavia, set sail for China in 1831. By the end of September he reached Tientsin, then continued his journey, during which he practised medicine whenever possible, farther northwards to "Manchu Tartary" (Gulf of Liaotung). Returning to Macao in December he embarked after a few months (February 1832) in a ship ("The Lord Amherst") chartered by the East India Company for a voyage along the coast of China as well as to Formosa, Corea and the Loo-choo Islands, during which he acted as interpreter and ship surgeon. Continuing to use Macao as his base he undertook until 1835 five more journeys. He afterwards became Morrison's successor as Chinese Secretary to the British authorities in Canton and Macao, taking part as interpreter and secretary on behalf of the British in the negotiations leading to the Treaty of Nanking. After the war he took up residence at Hongkong as Chinese Secretary to the Government, devoting at the same time much energy to plans for the evangelisation of China. He died at Hongkong in 1851(210).

The Rev. (later Bishop) W. J. Boone, though a graduate in medicine and figuring in Thomson's list of medical missionaries(211), apparently did but little medical work or none at all. He arrived, on behalf of the American Church Mission, at Batavia in 1837 and went in 1840 to Macao. Two years later (1842) he removed together with the missionary Abeel to the newly-opened port of Amoy but left in 1843 for America where he was consecrated Bishop. Returning to China, he took his residence at Shanghai where he died in 1864(212).

Looking back upon the period from 1805 until autumn 1842, as described in the preceding and this chapter, it can easily be perceived that it was one of the most important in the history of modern medicine in China since during this time modern medical practice was permanently installed in that country. As earlier in the case of Peking, the medical pioneers at Canton and Macao were not out on their own but were backed by powerful organisations in their

(210) Thomson, Chin. Recorder, Vol. XVIII, p. 478 and China Med. Miss. Jl., 1887, p. 46; A Century of Protestant Missions in China, p. 22; Encyclopaedia Sinica, p. 221; Latourette, l.c., pp. 216-217, 232, 253-54.

(211) China Med. Miss. Jl., 1890, p. 231.

(212) Chin. Recorder, Vol. XIX, p. 172; Thomson, China Med. Miss. Jl., 1887, p. 46.

country. And, had not Dr. Colledge advocated the cause of the work in China both by his example and writings, possibly the discontinuance of the activities of the East India Company might have led to a temporary standstill of the medical work as when the Jesuit Order was dissolved. As it was, Protestant missionaries were ready to continue along the path opened by the endeavours of Pearson, Livingstone and Colledge, who were destined, together with able Chinese assistants trained by them, for many years to be almost the only workers in the field. It would be idle as well as unjust to the memory of the missionary pioneers, to speculate now whether this evolution was fully desirable or not. However, it is interesting to note that during the period of transition dealt with in this chapter misgivings of this kind were evidently entertained. This is shown by a letter directed to the editor of the Chinese Repository (213) by *Non Anglicanus*, containing "brief remarks on the qualifications of medical practitioners to labor among the Chinese." The writer is against a union of the profession of divinity and medicine

which appears objectionable, as the all-absorbing duties of the physician would leave him but a scanty portion of time to devote to any regular course of religious instruction.

Apart from this, he seemed afraid of missionaries possessing but a smattering of medical knowledge, and, while bestowing highest praise upon the Rev. Peter Parker, he doubts whether many men like him will be available.

As we shall see, the fear that unskilful medical men might be sent out, was not realised. The anonymous writer was, however, right in so far as the necessity to combine practical religious work with their manifold medical activities must have been an enormous strain upon the early missionary doctors, though their capacity for work was laudable.

CHAPTER V

PERIOD AUTUMN 1842—1855

CONSOLIDATION AND EXPANSION OF EARLY MEDICAL MISSIONARY WORK

Influence of treaties concluded after the first Anglo-Chinese war upon Western medical work—Successful continuation of Dr. Parker's activities—Dissension in the Medical Missionary Society—Introduction of ether anaesthesia and chloroform narcosis into China—Dr. Parker retires from work in Canton succeeded by Dr. Kerr—Foreign medical undertakings at Canton independent of the Missionary Hospital—Medical activities in the newly-opened treaty ports of Amoy, Ningpo, Shanghai and Foochow—Early work at Hongkong—Hobson's activity at Hongkong and Canton—Publication of Chinese textbooks on medical subjects by Dr. Hobson—A modern Chinese Anatomist.

In the preceding chapter we have seen how far the incidents leading to the first Anglo-Chinese war and the hostilities themselves interfered with modern medical work in China. Our first object now is to show what influence the treaties concluded after the war had upon its further progress.

The peace treaty of Nanking, signed on August 29, 1842, on board H.M.S. *Cornwallis*, between the Chinese Commissioners Kiyang, Niu Kien and Ilipu on one hand, and Sir Henry Pottinger (assisted among others by the Rev. Gützlaff) on the other, did not contain any reference to medical work. In fact Article II, which granted the right to British subjects to reside with their families and establishments not only at Canton, but also at Amoy, Foochow, Ningpo and Shanghai, said expressly that they were allowed to do so "for the purpose of carrying on their mercantile pursuits" (214). Nevertheless the medical missionaries felt from the first—and quite rightly as further events proved—that the Chinese government would be as tolerant or even benevolent in regard to their charitable undertakings as it had been before the war. The 1843 Report of the Medical Missionary Society said in this connection:—

(214) MacNair, *Modern Chinese History*, Shanghai, 1923, p. 175.

Peace has been established with China, and upon terms that provide enlarged facilities for the prosecution of the labours of the medical missionary. . . . The efforts of this Society need no longer be confined to a corner of the empire, nor its hospitals be limited to one spot. . . .

Moreover, soon afterwards official recognition was taken of the medical work. Both the American treaty, signed on July 3, 1844, on behalf of the United States by Caleb Cushing, assisted by Dr. Peter Parker and the Rev. Bridgman as joint secretaries, and the French one, signed on October 24 of the same year, contained a provision that foreigners

residing or sojourning at any of the ports open to foreign commerce shall enjoy all proper accommodation in obtaining houses and places of business, or in hiring sites from the inhabitants on which to construct houses and places of business, and also hospitals, churches, and cemeteries. . . .(215).

Thus secure foundations were laid not only for continuing the work at Canton but also to commence new activities in the other Treaty Ports and naturally as well in Hongkong, now a British Colony.

Before dealing with these new undertakings we must continue with the history of the Canton Hospital and the Medical Missionary Society.

The war ended, Dr. Parker, who had married in America a niece of the statesman Webster, again reached China and with his bride took up residence at Canton on November 5, 1842(216). This was in direct opposition to the old regulation "that neither women, guns, spears nor arms of any kind can be brought to the Factories." Mrs. Parker was the first foreign lady to reside at Canton(217), living as a "lone woman without a single female companion for many months." Curious reference is made to her in a memorial presented about 1850(218) by the Imperial Commissioner Kiyung, himself a patient of Dr. Parker:—

Another point: It is the wont of the foreigners to make much of their women. Whenever their visitor is a person of distinction, the wife is sure

(215) Article XVII of the Treaty with the U.S. as quoted by MacNair, l.c., p. 186.—It is sometimes stated (see e.g. China Med. Jl., 1926, p. 93), that this so-called Toleration clause was inserted at the request of the Chinese representatives to mark appreciation of the work of Dr. Parker. This is quite likely, the more so as the High Commissioner Kiyung had been treated by the doctor in 1843 for a chronic skin affection (see 12th Report of the Ophth. Hosp., Chin. Repos., Vol. XIII, p. 301). However, an elaborate statement published in the Chin. Recorder (Vol. X, p. 223) emphatically denies the truth of this story.

(216) Thomson, China Med. Miss. Jl., 1888, p. 101.

(217) In 1830 already several English and American ladies had visited Canton but were soon compelled to leave again (Chinese Recorder, Vol. XVIII, p. 476).

(218) MacNair, l.c., pp. 198-199.

to come out and receive him. In the case of the American foreigner Parker, and the French foreigner Lagrené, for instance, both of these have brought their foreign wives with them; and when your slave has gone to their residences on business, their foreign women have suddenly appeared and saluted him. Your slave was confounded and ill at ease; while they, on the contrary, were greatly delighted at the honour done them.

Being a wise as well as tolerant man, Kiying added:—

The truth is, as this shows, that it is not possible to regulate the customs of the Western states by the ceremonial of China; and to break out in rebuke, while it would do nothing toward their enlightenment, might chance to give rise to suspicion and ill-feeling.

Dr. Parker reopened the hospital on November 21, 1842(219) in the former premises. Old Howqua, the landlord, demurred at first, remembering the trouble he had had when an inquest was held upon a beggar who had died in the hospital. He soon gave in, however, and when asked about the rent he refused any, saying:—"My own heart likes this business too; if any repairs are necessary, just call on my compradore and he will see that they are attended to."

It may be added here that this grand old man who acted, on this as well as on previous occasions, most munificently in regard to the medical enterprises, was likewise most generous in dealing with his "olo flen" (pidgin English for "old friends") among the foreign merchants(220). In 1842, when at an age of 74 he sought Parker's medical advice for pruritus, he asked the doctor how long he had still to live. When told ten years he said that he wished for three only. Unfortunately Howqua died of enteritis on September 4, 1843. The wealth he left behind him was estimated at anything up to a billion dollars by the press; he himself had estimated it in 1843 at twenty-six million dollars(220). It reflects great honor upon his son and heir

that the gratuitous lease of the building occupied as the Hospital, granted by his aged and distinguished father, has been and still is, continued by his estimable son (Parker's 1845-47 Report).

The success of the Canton Hospital became greater than ever, sometimes about one thousand persons being present on a receiving day. Dr. Parker, in the historical abstract published by the Society in 1843(221), said:—

It is difficult to convey to a person who has not witnessed the scenes at the hospital, a just idea of them. He needs to be present on a day for receiving

(219) 12th Rep. of the Ophth. Hosp., Chin. Repos., Vol. XIII, p. 301.

(220) MacNair, l.c., pp. 40-42; Encyclopaedia Sinica, p. 240.

(221) The idea to publish such an abstract originated at a meeting held on September 28, 1842, when it was resolved to publish it in Chinese as well as in English.

new patients and behold respectable women and children, assembling at the door the preceding evening, and sitting all night in the streets, that they might be in time to obtain an early ticket for admission. He need behold in the morning the long line of sedans extending far in every direction; see the officers, with their attendant footmen, horsemen, and standard bearers; observe the dense mass in the room below, parents lifting their children at arms-length above the crowd lest they should be suffocated or injured; stand by during the examination and giving out of tickets of admission to the hall above, where they are registered and prescribed for; urgent cases being admitted at once, while others are directed to come in five or ten days, according to the ability to attend to them. Upon that floor witness one or two hundreds, selected from the crowds below; officers of various ranks, from the district magistrate to the criminal judge of the province, sitting at the table of the physician, with scores of humbler fellow-citizens, seeking the same gratuity at the foreigner's hand.

A notable event of the period 1842-43 was the first birth attended to in the hospital, a pregnant woman accidentally shot in the breast having been admitted; unfortunately she succumbed to uterine hemorrhage. As heretofore, several foreign doctors assisted at Parker's operations in addition to Kwan Ato who independently operated upon less important cases. In the introductory remarks of the committee to Parker's report(222) high praise is bestowed upon this Chinese assistant.

who has been found competent to keep open the institution (during Parker's temporary absence from Canton), attending principally to diseases of the eye, to which he has paid most attention.

As we have seen, the idea of running Parker's institution as a purely ophthalmic hospital was never quite strictly adhered to. During the period January 1, 1844—July 1, 1845(223) it was given up altogether, it being noted that the hospital had by then to a great extent become a general one, though ophthalmic affections still continued to receive special attention. One of the spectacular operations performed during this period by Dr. Parker with the assistance of Drs. S. Marjoribanks and J. K. Kane was upon a man with a glandular tumor on the right side of the face, weighing after removal 8 2/3 lbs. The patient made an excellent recovery and was afterwards employed as porter of the hospital.

A still more noteworthy performance was the first successful lithotomy operation undertaken on July 17, 1844. This was on a man, aet. 35, who suffered from stone in the bladder, a condition uncommonly frequent in Canton.

That such bold operations could be confidently undertaken before methods to relieve pain were introduced, was due to the

(222) Chin. Repos., Vol. XIII, p. 369.

(223) Ibidem, Vol. XIV, p. 449.

courage and apparent lack of nerves of the patients. Parker mentions for instance a patient Yu of Kwong-chaufu who

with much composure laid himself upon the operating table and during the operation scarcely discovered any sensibility.

Another favourable factor was that wound infections, which made the contemporaneous surgical wards in Europe such haunts of horror, were practically unknown in the Canton Hospital(224).

It can thus be seen that the work flourished. Parker himself thus wrote in 1844(225):—

Never have the friends of this institution had more abundant reason to rejoice in its prosperity and influence. Never since its establishment has there been greater eagerness to take full advantage of it by high and low. . . . So dense has been the crowd that fears were entertained for the safety of individuals, lest they should perish in the crowd. . . .

Yet the great changes engendered by the war were bound to reflect themselves upon the Medical Missionary Society, which owed its existence to the foreign community, resident formerly at Canton, but now removed largely to Hongkong. The crisis came in the year 1845 when the Hongkong members demanded that meetings be held at their place and questioned the administration of a sum of \$5000 collected by Parker mainly in America(226). The committee wanted control of this sum whereas Parker wished to use it at his own discretion—a claim which was afterwards endorsed by the American donors(227). The result was that two committees and societies functioned at Canton and Hongkong respectively, each claiming to be the original society and each having for its President Dr. Colledge, who lived in England!

Attempts to make up the differences were not wanting. The Hongkong Society resolved on October 1, 1846(228)

that this meeting deeply regret the differences which have existed during the last two years among some of the members of the Society, and desire the restoration of confidence and co-operation.

A special committee was appointed to confer upon this subject with the members resident in Canton, the powers of which were

(224) A solitary erysipelas case is mentioned in the 11th (1840) report.

(225) Quoted by Lockhart, l.c., p. 131.

(226) Ibidem, pp. 144-45.

(227) At the 12th Annual meeting of the Canton Society (see Report published in 1850 and Chinese Repos., Vol. XVIII, p. 55) letters from Messrs. Appleton, Wm. Sturgis and other Boston contributors, re the establishing at Canton of a hospital and medical school for the benefit of the Chinese were read. They all expressed regret that this plan did not receive sufficient pecuniary aid from other quarters and left the amount to Dr. Parker's disposal.

(228) Report of the Med. Miss. Soc. for the Year 1847, printed at the Hongkong Register Office, 1848; Chin. Repos., Vol. XVIII, p. 55.

renewed at the end of the year 1847. Probably as a result of this, some correspondence was entered into and published in the 1848-49 Report of the Canton Society which decided in its turn to attempt a reunification.

That these efforts failed is shown by a resolution of the Hongkong Society, adopted on November 10, 1848, according to which all attempts had been made to bring about a reunion and no further efforts should be undertaken(228). Thus the two societies continued to exist side by side until, as far as could be established, the Hongkong Society quietly passed away. It had probably ceased to exist at the time of Colledge's death (1879) when Dr. Peter Parker became President of *the* Medical Missionary Society(216). A Notice published in 1889(229) stated that the missionary work at Hongkong was "under the sole control of the London Missionary Society."

The Canton Society, which—taken all in all—may be considered as the original one, continued to flourish, celebrating in 1888 its semi-centennial—an event worthily described by Thomson(216). It assumed in 1907 the name of the *Canton Medical Missionary Society*(230). This decided to provide its own staff but found it impossible to finance the institution upon a moderate standard of efficiency(231). In 1909 it was recorded(232) that the Canton Medical Missionary Society had been reorganised as a branch of the China Medical Missionary Association with Dr. John Kirk as president. Evidently, however, this was either only contemplated or the Canton Society continued in spite of this merger under its old name. At the end of 1916, when "the hospital was rapidly approaching bankruptcy"(233) a *Canton Medical Missionary Union* was formed, to which the management of the hospital was delegated, the property being held for the old *Society* by a Board of Trustees. Besides the original society, several other missionary bodies entered the union.

We must continue after this necessary digression with a contemplation of Parker's activities. His fourteenth Report (234), embracing the period from July 1, 1845—December 31, 1847, appeared in 1848, the delay being partly caused by much work and partly by a serious, almost fatal illness of the doctor. In spite of this and some

(229) *China Med. Miss. Jl.*, 1889, p. 25.

(230) *Annual Rep. of the Canton Miss. Hosp. for 1919*, p. 112.

(231) *Ibidem*, p. 118.

(232) *China Med. Jl.*, 1909, p. 202.

(233) *Annual Report of the Canton Miss. Hosp. for 1916*, p. 26.

(234) See also *Chin. Repos.*, Vol. XVII.

financial stringency (the accounts for 1846-47 show a deficit of \$525.40, due probably to the secession of the Hongkong members) great progress was made. The number of patients seen since publication of the last report was 8,247, bringing the total to 26,504. New out-patients were admitted once weekly (on Mondays). Serious operations, including several for calculus and the extirpation of a breast cancer (in which latter Dr. Dyer Ball assisted) were undertaken. At the same time Dr. Parker published a book dealing with his surgical experiences among the Chinese (235).

An important innovation made soon afterwards was that for the first time, not only in the Canton Hospital, but in the whole of China, *ether anesthesia* was used. The first operation conducted in this manner—it is not exactly stated when—is thus described by Parker:—

On hearing of the success of this new application of Sulphuric Ether, with such an apparatus as the Chinese were able to make, kindly furnished by a friend, it was administered to a Chinese of about 35 years of age, who had a Steatomatous tumor upon his right arm.....

After inhaling the vapor three minutes, though able to return an intelligent answer to questions put to him, the tumor was quickly extirpated without sensibility either to the knife in making the incisions and dissection, or the needle in applying the sutures.....

The patient declared that though he knew that the operation was being performed, he was scarcely sensible to the presence of the knife or needle. The wound healed by the first intention, not a teaspoonful of pus forming during the healing process, and in one week, simply required a few strips of the adhesive plaster. . . .

The second attempt on July 15, 1847 (*female* patient, aged forty, with a "moluscus" on the hip which had "attained a third the size of her head") was not successful, the patient resenting the narcosis and requesting to be operated on without it.

The third operation under ether was performed on October 4 of the same year, Parker having in the meanwhile received through the kind services of D. N. Spooner (one of the Vice-Presidents of the Society)

from Boston the apparatus of Dr. C. Jackson, the author of this discovery, and a good supply of sulphuric ether with a letter from the latter gentleman explaining particularly his mode of procedure.

For the first trial of this a robust farmer, aet. 49, was selected who had a steatomatous tumor, situated in the right axilla, "nearly the size of his head." Dr. Parker describes how the patient placed upon the operating table in a sitting posture

was directed to inhale deliberately with full inspirations the ether from Dr. Jackson's apparatus..... In forty-three seconds, the muscles of his arm suddenly relaxed and he ceased simultaneously to inhale the ether, and in

a state of insensibility he was laid upon the table..... His pulse was quickened, and the eyes assumed a dull and vacant appearance..... The tumor was then extirpated by Kwan-Taou (Kwan Ato), my Senior pupil, and three arteries tied in four minutes.....

It can be seen that Kwan Ato had by this time become a splendid surgeon. Parker bestows much praise upon him later in the report saying that he "is now able to render important assistance in the duties and labors of the Hospital." In addition to him three pupils were in training.

Chloroform was first used by Dr. Parker in 1848 (236). He expresses his acknowledgments to H. M. Schiefflin of New York,

for an abundant supply of excellent chloroform, accompanied with the pamphlet of Dr. Simpson of Edinburgh upon this new anaesthetic agent. A brief allusion to this remarkable agent which the nineteenth century has brought to the relief of the afflicted is all that is here necessary. The quantity of chloroform I have used with adults is about one drachm, gently inhaled from a sponge surrounded by cloth lined with oilpaper to prevent evaporation. In some instances, a second application has been required.

Altogether the drug was administered to 8—10 patients, only with some hesitation to those with bladder stones (the first case of this kind being operated upon under chloroform on November 24, 1849).

Parker's report for the years 1850 and 1851 is published together with the minutes of the 13th and 14th meetings of the Society. The former was held on February 21, 1851 in the doctor's residence who, as Senior Vice-President, took the chair. The expenses for 1850, when about 4,000 new patients were admitted, were \$605.67 only and a balance of \$3,500 was on hand. Vice-President Bowring, LL.D., highly complimented the Chinese assistants in a speech made at this assembly.

It is important to mention that during this period two *postmortems* were performed. The first was on the body of a patient who had entered the hospital in a dying condition with bladder stone on May 18, 1850:

With some difficulty the consent of his relations was obtained to extract the stone, which, considering the prejudice of the Chinese against anything like an autopsy, may be regarded as a triumph.

The second patient had died after an operation for strangulated hernia which had been performed in a hopeless condition. "Autopsy disclosed that gangrene of the intestine had taken place." Apart from Kwan Ato only two pupils were under instruction "though the

(236) The first operation under this new anaesthetic was apparently performed on April 17 of that year upon a patient with hypertrophy of the breasts (Report of the Canton Hospital for 1848 and 1849; see also Chinese Repos., Vol. XIX, p. 253).

number of applicants has not been small." Speaking of his senior pupil Dr. Parker says:

Kwan Ato, whose name has several times occurred in this report (237) has already acquired a very respectable amount of theoretical and practical knowledge of his profession, and by his talents, address, correct moral character and success as an oculist and surgeon, has obtained, in a good degree, the confidence of his countrymen, and has the respect of all foreigners, to whom he is known. His talents are of an order to enable him to distinguish himself in any pursuit, and particularly in the profession he has chosen, and for which he has the fondness necessary to excel.

The majority of operations for pterygia, entropia, cataracts, ascites, etc., have been performed by him. From the records of the cases of paracentesis abdominis, it appears that no less than 344 lbs. of fluid have been abstracted by him last year. He has extirpated many tumours, extracted teeth, removed carious bones, and successfully treated dislocations and fractures, simple and compound.

For the last year Chau Afu, a young gentleman of a respectable and wealthy family, has been under his special tuition, at the same time enjoying the advantages of the Hospital.

Liang Aliin, the junior pupil, continues to acquit himself with great propriety, and is yearly developing talents of a respectable order.

It appears that Parker had besides these pupils also a chief dispenser, Wang Asui by name. The only reference we could find in regard to him is contained in the Report for 1854 (238) when his death after faithful service for nearly twelve years is recorded. It must be said in general that information in regard to Parker's Chinese assistants is somewhat scanty so that it cannot be established for instance how many pupils he trained altogether. Lockhart (187) who speaks with greatest praise of Parker's educational work claims that

more than one of them, on leaving the hospital, have established themselves as surgeons in private practice in distant parts of the Canton province.

We have mentioned already that Dr. Parker, together with the Rev. Bridgman was present as joint secretary at the signing of the U. S. treaty with China in July, 1844. At the formal exchange of treaties at Pu T'ong, Canton, December 31, 1845, he acted as interpreter and afterwards became Chargé d'Affaires. In 1847 his connection with the American Board of Missions ceased (216), but he continued his medical service at the Hospital and amongst the foreign community so far as his diplomatic duties permitted. However, more and more of the work devolved upon his able Chinese assistants (239).

(237) Kwan Ato is mentioned in connection with a case of steatomatous tumour, 3¼ ft. in circumference and weighing 18¼ lbs., the operation of which, "being one of easy execution, was entrusted to Kwan Ato by whom it was performed with dexterity and success."

(238) Minutes of 3 Annual Meetings for the Years 1854, 1855 & 1856; Macao, 1857.

(239) Lockhart, l.c., p. 175.

In March, 1853, Dr. Parker with Commodore Marshal arrived on board the U.S.S. "*Susquehanna*" at Shanghai bound for Nanking but shallowness of water prevented their progress. Returning to Hongkong he was wrecked at the mouth of the Min River but escaped bodily harm (216). He then resumed the work at Canton. In summer, 1854, when the city was besieged by the army of the Triads, many wounded, especially among the imperialist soldiery, were admitted. In general, however, the medical activities were much hampered by the disturbed state of affairs and in autumn the hospital had to be closed for some time and was reopened in December only. In the meantime Dr. Parker accompanied the British Minister MacLane to the mouth of the Peiho river, where they made joint applications to be allowed to discuss treaty matters in the capital, and remained till November 10.

At the 17th Annual Meeting, held in Dr. Parker's residence on February 21, 1855, the doctor, near the close of his memorable medical career in China, thus spoke:—

It is with peculiar feelings, Gentlemen, I meet you on this 17th anniversary of the Society, and twenty-first of my residence in China. Memory brings up the past. It recalls years of toil, and all the responsibility of one who has been entrusted with the health and lives of thousands and tens of thousands of fellowmen, embracing every condition of life, from the beggar to the member of the Imperial House—every grade of office, from the street constable to the Imperial Commissioner.

Wearisome days and sleepless nights have been spent; the best of my days have been devoted to the gratuitous labor of endeavouring, with the Divine Blessing, to arrest maladies that were hastening their victims to the grave. To the deaf, hearing; to the blind, sight; to the dying, life—have been instrumentally restored. I have had the gratification of seeing some who have survived severe operations for five, ten and even twenty years, who had diseases which would long since have terminated in death, if they had not been arrested. Others, after restoration to health for a few years, have passed away. Among the old Hong-merchants, Howqua, Pwantingqua, Kingqua—among officers, Commissioner Lin, Governor Hwang Ngantung, Wan Yuen-wan, might be mentioned, as those who have been relieved.....

In April, 1855, Dr. Parker, who expected to return to the U.S. in order to recuperate, asked Dr. John Glasgow Kerr to take charge of the hospital during his absence. Dr. Kerr complied with this request and throughout a long and most remarkable career proved himself a worthy successor of Parker. He took up duties in May 1855 and reopened the hospital in June. Dr. Parker once later returned to China as U.S. Minister. He presided at the 19th Annual Meeting of the Society held on February 21, 1857, at Macao in the house of the American Legation but soon afterwards left China finally. He established his residence at Washington where he held positions as Regent of the Smithsonian Institution, President of the Evangelical Alliance, and of the Yale College Alumni Association. When Doctor Colledge died in 1879, Parker became President of the Medical Mis-

sionary Society and ever showed a hearty interest in its welfare (216). He lived to witness the foundation of the China Medical Missionary Association and was named one of its delegates for the 9th International Medical Congress in September, 1887 (240). On January 10, 1888, he died at the ripe age of 84 years having "probably done more to advance the cause of Medical Missions than any other one person" (216).

We must return now to a contemplation of some foreign medical undertakings independent of the Missionary hospital which had been founded at Canton. Mention must first be made of the work of the Rev. Dyer Ball, M.D., sent out by the American Board of Commissioners for Foreign Missions. Having resided at Singapore since 1838 he went in 1841 to Macao and two years later (1843) to Hongkong where he opened a dispensary. In 1845 he removed to Canton and established in the year 1848 a chapel, dispensary and boarding school at Ham-la-han near the south-east corner of the city. These establishments were closed in 1853. During the second Anglo-Chinese war Dr. Ball was with Drs. Kerr and Graves at Macao; he then returned to Canton where he died in 1866 (241).

Next we come to the Rev. T. T. Devan, a medical worker belonging to the American Baptist Mission who, after having run a short-lived dispensary at Hongkong (1844) settled in 1845 at Canton with a dispensary in Lun-hing street. He was compelled by ill-health to retire to the United States in 1847. Nevertheless his activity is very noteworthy because he published in the same year (1847) at Hongkong a "Beginner's First Book in the Chinese Language" (Canton Vernacular—161 pp.) which contained anatomical terms as well as lists of diseases and medical phrases in Chinese and English. This first attempt to create a Chinese medical nomenclature was republished in revised and enlarged form in 1858 and appeared in a third edition supervised by Wm. Lobscheid in 1861 (242).

The Rev. William Speer, M.D., of the American Presbyterian Mission had also but a short career in China. Arriving in Macao on December 27, 1845, he removed after the death of his wife in 1847 to Canton but retired in 1849 to the United States. Here he eventually took up work among the Chinese in California (243).

Since we are dealing later in this chapter with Hobson's work at Canton in 1848, we may continue now with a scrutiny of medical activities of the American Presbyterians in the city.

(240) Chin. Recorder, Vol. XVIII, pp. 86, 113.

(241) See Chinese Recorder, Vol. VII, pp. 174-201 (Kerr); *ibidem*, Vol. XIX, p. 178; Thomson, China Med. Miss. Jl., 1887, p. 45.

(242) See Chinese Recorder, Vol. VII, pp. 174-201; Thomson, China Med. Miss. Jl., 1887, pp. 45, 115; Cousland, *ibidem*, 1905, p. 53.

(243) Thomson, China Med. Miss. Jl., 1887, p. 45; Chin. Recorder, Vol. XIX, p. 372.

The Rev. A. P. Happer (born in Pennsylvania in 1818), a medical worker of this mission, had already arrived in Macao in October, 1844, but was only able to remove with the school, founded by him jointly with the Missionary French, to Canton in 1847. Soon afterwards he married Elizabeth, eldest daughter of the Rev. Dyer Ball. In 1851 Dr. Happer opened a dispensary near the Tsing-hai Gate, not far below the Dutch Folly, on one of the main streets between the wall and the river bund. To this the name of Wai-tsai (惠濟—i.e. Charitable relief) was given. In 1852 (or 1853?) he also began to see patients in a chapel rented by the Missionary French in Tai-ping-sha street in the Southern suburbs. Dr. Happer educated at least one pupil, Lam Tsung (林冲) who was later on transferred to the Missionary Hospital.

The great medical pioneer Dr. John Glasgow Kerr (born in Ohio, U.S., in 1824 and graduated from the Jefferson Medical College, Philadelphia), arrived with his wife in Canton on May 18, 1854. He soon took over the two dispensaries because Dr. Happer decided to visit the United States together with his family (they actually left in December of the same year). As discussed already, Dr. Kerr also took charge on May 5, 1855, of the Canton Missionary Hospital and reopened it after some necessary repairs in June. At the same time he continued the Wai-tsai dispensary but had to give up the work in French's chapel.

It can be gathered from Kerr's report that he received new patients twice weekly in the hospital and three times in the dispensary while the sixth working day was devoted to operations. A prominent part in the latter was taken by a voluntary helper, Dr. W. G. Dickson, who performed several stone operations. Kerr was also assisted by Kwan Ato who continued to serve under him and by Lam Tsung, recently transferred from the dispensary. Howqua's heir continued to supply the building rent-free and an ample stock of medicines was on hand as Dr. Parker had donated all his before departing for America. Numerous patients, about a third of them females, attended and there seemed every hope for an uninterrupted continuation of the work. Unfortunately, as we shall see in the next chapter, the second Anglo-Chinese war brought it to a complete, though temporary standstill (244).

We may turn now with a free mind to the medical activities started in the newly-opened treaty ports and at Hongkong. Mention may first be made of the old port of *Amoy* (廈門) where trade with Spain and the Philippines had been formerly carried on. This im-

(244) Chinese Recorder, Vol. VII, pp. 174-201; Minutes of 3 Annual Meetings, etc., Macao, 1857; A Century of Protestant Missions, p. 665, Encyclopaedia Sinica, p. 228.

portant centre had been taken by the British troops in 1841 and—as already mentioned—the two missionaries D. Abeel and Dr. Wm. J. Boone began to reside there early in 1842. They were soon joined by Dr. William Henry Cumming who opened about the middle of June, 1842, a dispensary at Ku-lang-su (鼓浪嶼), a small island adjoining the port, in the house of the Rev. Abeel. Since he was unconnected with any mission at home he could not be officially recognised by the Medical Missionary Society. He was, however, assisted by it and, supporting himself from his own resources, laboured zealously and successfully, though unable to admit more than a few in-patients.

In November, 1843, Dr. Jas. C. Hepburn, a Princeton graduate and connected with the American Presbyterian Mission, came to Amoy after a prolonged stay at Singapore (since 1841), and began to work together with Cumming. Ku-lang-su not being a suitable place either for a dispensary or for missionary work in general (chiefly because it was out of the way and sometimes difficult of access), the mission decided to remove to Amoy proper. With some difficulty a suitable residence was found where after the necessary alterations the dispensary was installed. A separate building near-by was rented to house in-patients. As was the rule in these early days, the patients had to provide their own food and attendance, whenever able to do so. However, for the first time in the history of the missionary hospitals, they were supplied with bedding. As was expected, the number of applicants for relief grew, 1,862 patients being seen between February 1, 1844 and July 1, 1845.

Failing health necessitated Dr. Hepburn's return to the United States in 1845, where he was engaged for several years in private practice at New York. He returned in 1859 to the Far East to become a medical missionary pioneer in Japan.

Dr. Cumming carried on the work, restricting it to such patients who could be really benefited and seeing comparatively few surgical cases. He appeared to have been most successful in treating cases of quartan fever with Fowler's solution of arsenic. Unfortunately, like his collaborator Hepburn, he was compelled to retire in 1847 and the work of the dispensary was suspended for a time.

In December, 1848, Jas. Hyslop, M.B., of the London Missionary Society arrived and resumed the work. However, he broke off the connection with his society in 1851 and the dispensary was again closed. Dr. Hyslop went soon afterwards to Australia where he was massacred by the natives in 1853.

Meanwhile, a new dispensary had been started by Dr. Jas. H. Young of the English Presbyterian Mission. He had been in private practice since 1846 at Hongkong but offered himself in 1850 as mission-

ary and started in the same year work at Amoy. The decease of his wife was followed by his own failing health, owing to disease of the brain and he was obliged to resign in 1854. He died soon afterwards in Scotland under very melancholy circumstances.

Before Dr. Young had left, the old dispensary work was taken up by Dr. Hirschberg who came from Hongkong to Amoy in 1853. He was soon kept busy as the city of Amoy fell into the hands of the Triads and was besieged by the Imperial troops. Many wounded of both sides were successfully treated in the hospital thus increasing the confidence of the people in Dr. Hirschberg's work. It is regrettable that he also had to leave in 1858 on account of failing health (245).

Turning now to the interesting early medical history of *Ningpo* (甯波) mention may first be made of Chinese benevolent institutions already existing when the first foreign doctors came. The oldest of these was a Foundling Hospital, instituted in the 1st year of Chien Lung's reign (A.D. 1736). This establishment had more than 100 rooms and harboured in 1844 67-70 infants and their *wet-nurses* (246). Milne, in a valuable article on "Seven Months' Residence at Ningpo" (247) describes the work of the "Practical Benevolent Society at Ningpo", founded 1834, which dispensed medicines to the poor, took care of outcast infants, issued raiment and coffins and buried destitute dead. He also alludes to a "Provident Relief Asylum" (Yang tsi Yuen) harboring the infirm and disabled, and to several almshouses for the poor.

Modern hospital work was started at Ningpo (opened to foreign trade in 1843) by Dr. Daniel Jerome Macgowan, who had graduated from the College of Physicians and Surgeons, University of the State of New York. Commissioned by the Baptist Church of America, he delivered, a short time before his departure, before the Temperance Society of his College a lecture on the "Claims of the Missionary Enterprise on the Medical Profession" (248). Having spent the first months of his stay in China at Hongkong he proceeded to Chusan and Ningpo. In the last mentioned city he started medical work early in November, 1843, in a building in the business part of the city "freely given by a native merchant." Soon, so many patients applied

(245) For the early medical history of Amoy see: Chinese Repos., Vol. XIII, pp. 369-382; Hepburn, *ibid.*, Vol. XV, p. 181; Cumming, Rep. of the M. M. Soc. for 1847, Hongkong, 1848 & Chin. Repos., Vol. XVII, p. 250; J. Macgowan, Chin. Rec., Vol. VII, p. 111; *ibidem*, pp. 174-201; *ibidem*, Vol. XIX, p. 176; Lockhart *l.c.*, pp. 210-215; Thomson, China Med. Miss. Jl., 1887, p. 45; Balme, *l.c.*, p. 48.

(246) Chin. Repos., Vol. XIII, p. 81.

(247) *Ibidem*, Vol. XVI, p. 14.

(248) New York, 1842, pp. 24.—Reviewed in the Chin. Repos., Vol. XII, p. 188.

that only those with eye diseases were admitted. After three months Dr. Macgowan had to leave again on private business and did not resume work until April, 1845 (249).

Meanwhile another medical missionary, Dr. D. B. McCartee of the Presbyterian Church of America, had reached Ningpo (June 20, 1844). He opened a dispensary at his own house and also visited patients in their homes; in fact it seems that from 1851 onwards he concentrated upon this practice in the city, having closed his general dispensary (250). According to Lockhart (249) he was very successful in this work upon which no reports were published. Dr. McCartee also acted in Dr. Macgowan's absence when the latter was ill in 1845- or 1846 (251). It was Dr. and Mrs. McCartee who adopted a girl foundling and later had her educated as a physician in New York. She, Dr. Yamei Kin, was destined to be the first Chinese woman physician trained abroad.

Dr. Macgowan, resuming his labours in April, 1845, worked first in a private dwelling and afterwards in a large temple in the city. Soon, he obtained premises suitable for a hospital and capable of accommodating eighteen in-patients. The generosity of the European community of Bengal, among whom he collected over 2,000 rupees, enabled him to furnish the hospital with instruments as well as books, plates and anatomical models (the latter from Paris) (252).

The dissension in the Medical Missionary Society led to a temporary closure of the hospital. Medicines were issued at the Mission chapel and from the physician's residence as far as the limited supply permitted. Macgowan also visited patients in their homes and treated a number of soldiers wounded in a local rebellion and housed in a temple. In this he was assisted by Dr. Yvan of the French Embassy.

Amidst all these difficulties and labours Dr. Macgowan found time to start the treatment of opium-addicts. He was led to them in a curious manner: A philanthropic Chinese issued handbills where he recommended a simple mixture as a cure for the evil, insisting at the same time upon immediate and total abstinence from the drug. Because the remedy advocated was cheap few trusted it. However, seeing that some success was obtained, Macgowan adopted this idea and began to administer "empirical remedies, addressed chiefly to the imagination.....to a number of applicants"—not without some good results (251).

(249) Chin. Repos., Vol. XIII, pp. 111, 369-382; Macgowan, *ibidem*, Vol. XV, p. 342; Chin. Recorder, Vol. VIII, p. 129; Lockhart, *l.c.* p. 221.

(250) Chin. Recorder, Vol. VIII, p. 129; Chin. Repos., Vol. XX, p. 531.

(251) Report of Ningpo Hosp., written August 1846 & Chin. Repos., Vol. XVII, p. 242.

(252) Chin. Repos., Vol. XIII, p. 503.

In his next report (for the period August 1846-48) (253) Macgowan stated that he reopened the hospital with the aid of the Hongkong Medical Missionary Society. Nearly 150 opium smokers were treated; they had first to abstain from the drug for 24 hours without receiving any medicine; then adequate symptomatic treatment was started. The results were quite encouraging, at first about one third, later on (when only patients who were in earnest were taken in hand) even one half of those treated being cured. The treatment lasted at least one month, sometimes up to two. Relapses were said to be exceptional.

Interesting as this work was, its importance is surpassed by another undertaking Macgowan started during the period under review, viz., the instruction of the old-style practitioners and students in anatomy. Dealing with this subject Macgowan said that

the mere practice of medicine and surgery should not be considered the more important part of the professional labours of the Medical Missionary. It behoves him to instruct native practitioners in anatomy and physiology, to give them works on medicine and the collateral sciences in their own language.....

It is in the prosecution of such labours that our profession may hope to effect most good in China. The opinion prevails that the Chinese cannot be instructed in the sciences except through the English, Latin or other alphabetic languages, their own being deficient in the terms which are needed at the outset. The difficulty of communicating this knowledge in the vernacular is unquestionably great.....But.....if a student might venture an opinion it would be, that it is possible to devise the requisite terms which would be readily intelligible to educated natives.

Macgowan then goes on to state that with the help of French models, a skeleton and plates, an attempt was made to lecture on anatomy before the Ningpo practitioners and their students. Much interest was aroused and "if the instruction they derived was superficial, subsequent courses may extend their knowledge and make it available."

An immediately gratifying result was that one of the practitioners, a man "of more than ordinary intelligence" and an advanced bachelor of arts was engaged on behalf of the Society as assistant physician. Macgowan bestows great praise upon this Dr. Yang, saying that without his assistance the benevolence of the Society would have been much restricted Dr. Yang was soon

qualified to prescribe for a large number of the applicants, and being constantly present none are turned away without an effort made to relieve them.....

The poor have always been the principal recipients of this charity, and it is notified that those whose means permit are expected to employ native physicians, except in those cases which are confessedly beyond their skill.

(253) Published in the Reports of the Hongkong Society, 1849 & China Repos., Vol. XVIII, p. 505.

Dr. Macgowan adds that he spent some weeks of the summer 1847 at Chusan where he had a temporary dispensary in the temple of the sea god formerly used as commissariat by the British troops. During part of the summer of 1848 he dispensed at the citadel on Chinhui Hill.

In 1851, Dr. Macgowan reported (254) that he was by then under the Canton Medical Society from which he received an appropriation to cover expenses previously incurred and to carry on the work. The scantiness of funds did not as a rule provide for in-door patients but many could be benefited in the dispensary. The people here were more reluctant to trust the knife than at Canton, and ophthalmic operations were practically the only ones performed.

Reference is made to an epidemic of measles prevailing at Ningpo in 1848 and the information added that this disease raged in pandemic form in the maritime districts of China and throughout the Pacific coast till it reached the Samoyedes, among whom it was particularly fatal. According to a Russian captain all Russian colonies were visited

and great numbers of the inhabitants were taken off. Some of the islands in the Aleutian chain lost most of their population. In Sitka, amongst a population of 600, we had in one month 80 deaths, if not more; nearly all except the Europeans were sick, so that all the town was in sorrow from fear and dread.

All the islands of the Pacific suffered from measles which were specially destructive in the Sandwich Islands (Hawaii).

Macgowan adds that

it is remarkable that whilst rubeola was traversing this region of the earth from the tropic of Cancer to the Frigid Zone, cholera was pursuing a western course from the Volga to the Mississippi.

Since we propose to deal comprehensively with the problem of *cholera* in a subsequent chapter, suffice it to say here that, when this disease appeared at Ningpo in 1851, the gentry attempted with their usual benevolence to help the afflicted. Placards were posted in every quarter, giving directions for the treatment of the malady in its different phases.

Dr. Macgowan continued to treat opium addicts, several hundreds of whom had by then passed through his hands with satisfactory results. As before he insisted upon immediate and total abstinence from smoking but used Dover's powder against the often distressing diarrhoea as far as possible. He adds that the Chinese practitioners

(254) Report of the Hospital at Ningpo for 1851, Canton 1852, and Chin. Rep., Vol. XX.

attempt cures by gradual reduction of the drug. This is feasible but relapses are more apt to occur (255).

The instruction of the Chinese practitioners and students "in anatomy and the sciences of healing art" continued to form a prominent object of Macgowan's labour but he was much hampered by lack of suitable lecture rooms. Some in the Moon Lake College were put at his disposal but were unfitted even for the doctor's astronomical lectures as idle crowds filled them instead of those really interested. As a means of reaching the latter, he published a monthly magazine in Chinese containing information on scientific and religious subjects and also (in 1851) a small work, illustrated by several plates, on electricity. This was followed in 1853 by a pamphlet called "The Navigator's Golden Needle" taken from Colonel Reid's work on typhoons and published in the hope that its simple axioms would help the sailors to escape the storms (256).

At the end of 1854, Dr. Wm. Parker of the Chinese Evangelisation Society (London), a man of mature years, arrived in Shanghai. After spending some time there, studying the language and occasionally attending sick Chinese, he removed in 1855 to Ningpo. With the support of the foreign communities of both Shanghai and Ningpo he was able to build a commodious hospital at the latter place where he worked with great success. Unfortunately, his wife having died from cholera in 1859, he departed with his children for England. His place was filled for nine months by Dr. Jas. Hudson Taylor (257).

In order to deal properly with the opening of medical missionary work at *Shanghai*, we must first continue our description of Lockhart's activities. As we have seen, this pioneer had returned during the war from Chusan to Macao where he assisted Dr. Hobson. After the Treaty of Nanking in 1842, he went to Hongkong in the hope of proceeding to Chusan, but was detained at the former place till the spring of 1843. During this interval he supervised the building of the Medical Missionary Society's hospital in that new British colony which was afterwards placed under Hobson's care (258).

In July, 1843, Lockhart resumed work in Chusan, achieving the same success as before. Many old patients again attended, or brought

(255) Macgowan embodied, many years later, his experiences in a book dealing, among other things, with the treatment of opium smokers (see notice in the *Chin Recorder*, Vol. IX (1878), p. 485.

(256) Lockhart, l.c., p. 232.

(257) Scarborough, *Chin. Recorder*, Vol. V. p. 137; Lockhart, l.c., p. 233; Thomson, *China Med. Miss. Jl.*, 1887, p. 45; Guinness, *The Story of the China Inland Mission*, Vol. I, Part II.

(258) Lockhart, l.c., p. 126.

their friends(259). It became clear, however, that the ports of Shanghai or Ningpo, just opened to the foreigners, would afford much ampler facilities(260). Dr. Lockhart first paid a short visit in July to Ningpo where he treated about 200 patients. Towards the end of the year he twice went to Shanghai when efforts were made to obtain a house (261). In January, 1844, he finally closed the Chusan Hospital, and the following February started the Society's operations at Shanghai (262).

The work was first carried on in a Chinese house situated near the South Gate (263) and rented by the Hongkong Medical Missionary Society. The institution was a great success from the start:—

As soon as the hospital was opened and its purpose became known, crowds of people came daily to the house, urgently, often boisterously requesting to be attended to. The applicants were not only residents in Shanghai, but many came from Su-chau (Soochow), Sung-kiang and other cities in the vicinity, and also from the island of Tsung-ming (261).

Lockhart, in his "Report of the Medical Missionary Society's Hospital at Shanghai" for the period May 1, 1844—June 30, 1845 (264) speaks of 10,978 patients being attended to.

In 1846 it became necessary to provide ampler and better accommodation for the Chinese Hospital, as the establishment was then called. No footing could be found within the city itself, so a piece of ground situated more than a mile outside the north gate was chosen. Here a building with a large hall for out-patients and commodious wards was erected, the total cost together with land being \$3,200. To make up this sum \$1,000 were borrowed from Messrs. Turner and Son. The property was vested in the hands of some British residents at Shanghai on condition that it be always used for the purpose of a hospital. About the same time, in accordance with a wish of the subscribers to the Hongkong Medical Society, a local committee was formed consisting of Messrs. A. G. Dallas, Chas. Shaw (Treasurer), T. C. Beale (Auditor) and Dr. Lockhart (Secretary) (265).

(259) *Ibidem*, p. 235.

(260) That a choice was to be made between the two places is elucidated from a statement in the 1843 Report of the Medical Miss. Soc. (quoted by Lockhart, l.c., p. 131) where it is said that he "is now prepared to go to Shanghai or Ningpo, whichever may be deemed most eligible for the establishment of a hospital."

(261) Lockhart, l.c., p. 236.

(262) It is often stated that Lockhart opened his hospital at Shanghai in 1843. However, this event really took place early in 1844.

(263) Chin. Recorder, Vol. VIII, p. 302 & Hawks Pott, A Short History of Shanghai, p. 91.

(264) Chin. Repos., Vol. XV, p. 281.

(265) Report of the Med. Miss. Soc. for the Year 1847, Hongkong 1848, & Chin. Repos., Vol. XVII, p. 188; Lockhart, l.c., p. 237; Hawks Pott & Brayton Barff, l.c.

The work of the hospital was transferred to the new building in July, 1846, and the improved accommodation soon added to the popularity of the institution (266). The 1846-47 Report (267) speaks of 15,217 patients attending at a total expense of \$485.15. To extend the benefits afforded by the hospital, a dispensary was opened in 1849 at the London Missionary Society's chapel inside the city, at the back of the public tea gardens. At this place, which was kept open for several years, patients were seen on Tuesdays and Fridays (268). The 1849 report also mentions that several operations were carried out under chloroform and numerous opium-addicts were seen, some of whom could be cured by a treatment similar to that adopted by Macgowan. In his next (1850) report (269) Dr. Lockhart is less optimistic, saying that a majority of the smokers lacked the resolution necessary to get rid of the habit.

The capture of the city by the Triads (1853-55) added much to the work of the hospital where numerous wounded among both rebels and Imperial troops were cared for. The hospital was situated between the two fighting forces and though these as a rule tried to spare it (Brayton Barff) it was often fired at, and it reflects great honour upon Lockhart and his staff that, amidst all these dangers and difficulties, the establishment was permanently kept open for all who needed help (270).

Dr. Lockhart tried from the first to train pupils but various circumstances retarded success (271). Most of his pupils did not stay long enough to go through any regular course. One, who remained some time and learnt sufficiently to render valuable assistance, had to leave Shanghai with his family; he afterwards set up a lucrative private practice in his native district. One pupil, however, Chun-fu by name, persevered and became well grounded in the practice of medicine and surgery. He was taken over by Dr. Hobson and was afterwards in actual charge of the work under Mr. Collins (272).

Mention may be made now of other Protestant medical missionaries arriving at Shanghai during the period under contemplation. The Southern Baptist Convention of America, which commenced work at Shanghai in 1847, appointed the Rev. J. S. James for the post. He,

(266) Lockhart, l.c., p. 242.

(267) See also Chin. Repos., Vol. XVII, p. 201.

(268) Chin. Repos., Vol. XIX, p. 300 & Lockhart, l.c., p. 245.

(269) Chin. Repos., Vol. XX, p. 152.

(270) A description of these trying times is contained in Chapters X & XI of Lockhart's book

(271) Ibidem, p. 141.

(272) Ibidem, pp. 141-42, 261.—Dr. Chun-fu is apparently identical with the vaccinator Hwang Chen-foo or Wang Chung-fu mentioned in Chapter III.

together with his wife, safely reached Canton but unfortunately both were drowned at Hongkong, when the schooner *Paradox* upon which they had taken passage for Shanghai, capsized (April 15, 1848) (273) Dr. G. W. Burton of the same mission arrived in 1852 at Shanghai. He soon left again but returned in 1854 and continued to work until 1861; no details are known in regard to him.

Medical work of the American Methodist Episcopal Church (South) was initiated at Shanghai in 1848 by their first missionary, the Rev. Chas. Taylor, M.D., and prosecuted for five years, when the illness of his wife compelled him to return to the United States. In 1854 the work was resumed by the Rev. D. C. Kelley, M.D., (Tennessee) who resigned in 1856 for the same reason as Dr. Taylor.

The Rev. Jas. Hudson Taylor, afterwards founder of the great China Inland Mission, reached Shanghai in 1854 under the Chinese Evangelisation Society. Born in the year 1832 he had been trained in medicine, first as assistant to a busy practitioner connected with the Medical School in Hull (1849-51) then in the London Hospital. While he seems to have done little medical work at Shanghai or even none at all, he practised on a small scale at Swatow (where he arrived in 1856 but left after four months residence) and at Ningpo. We will return to his further career in the following chapters.

Dr. M. W. Fish of the American Episcopal Mission arrived at Shanghai in 1855 and opened a dispensary near the church of his mission in the city. He retired in 1858, accepting the office of U. S. Vice-Consul (274).

We have mentioned above the signal services rendered during the Triad rebellion by Lockhart's Chinese Hospital. Worthy tasks of a similar nature were undertaken by the Catholics as well. Their mission had already established a hospital in 1849 at Tong-kia-tou, Shanghai, to take care of the refugees driven from Kiang-nan Province through famine after a disastrous flood. This establishment was probably of a temporary nature. Medical work was certainly taken up again during the occupation of Shanghai by the Triads. Like the Protestant Missionary Hospital, the church and residence of Tong-kia-tou lay between the two combating parties. Father Lemaitre not only remained at this dangerous post but cared for the wounded soldiers in a small building which ordinarily served as a Customs house (October, 1853). Brother Saguez, a trained layman, was sent from Zi-ka-wei (Siccawei) to help him, but more skilled assistance became necessary. This was obtained through the commander of the French

(273) Thomson, Ch. Med. Miss. Jnl., 1887, p. 45 & A Century of Protest. Missions, p. 317.

(274) Chinese Recorder, Vol. VIII, p. 311; Thomson & Guinness, Lc.; A Century of Prot. Miss., p. 135.

man-of-war *Cassini* who gave permission for his surgeons Fallier and Hubac to work in the hospital. Fallier especially responded well. Among the patients cared for was a future Viceroy of Nanking who ever remained grateful to the Catholic missions. Aid was given to civilians as well as military; in fact, a report of May, 1854, says that equal numbers of both were cared for.

When the siege was over, the work probably came to a standstill for about ten years, after which Brother Bernard resuscitated it with much success, caring for thousands of patients until his death in 1867 (275).

Besides these foreign medical establishments, quite a number of Chinese ones existed which are fully described by Lockhart and other observers (276). The oldest was the Foundling Hospital, said to have been opened in the 49th year of K'ang Hsi (A.D. 1709). This was similar to institutions formerly run in Europe. The children to be admitted were

placed by their relatives in a sliding drawer in the wall near the front gate, and a bamboo drum is struck to give notice to the gate-keeper, who opens the drawer from the inside of the wall and transfers the little one to the care of the matron (277).

Some of the children were sent out to nurse while others were kept in the hospital under the charge of hired wet-nurses; each of these had to care for two children and received flour when there was not enough milk. Lockhart was favourably impressed by this institution which had a resident physician supposed to be skilled in the diseases of children.

Another often described institution was the *Tung-ying-tang* or Hall of United Benevolence which, in addition to burying the poor and distributing money, especially to widows with families, kept open a hospital or alms-house outside the north gate for the aged and infirm.

Soon after Lockhart's hospital had been started, the *She-e-kung-keuh* (施醫公局) or Establishment for Gratuitous Medical Relief was opened by some wealthy Chinese who wanted to be as charitable as the foreigners. It was similar in kind to the dispensaries said to exist in every *fu* or departmental city (e.g. Soochow and Sungkiang) but undoubtedly conducted on a larger scale. Quite a number of Chinese specialists attended, partly in an honorary capacity, partly being paid out of the funds. Powders and plasters for surgical cases as well as ophthalmic remedies were supplied free of charge. A special

(275) Personal information, kindly forwarded by the Rev. Father de la Serviére, Librarian at Zi-ka-wei.

(276) Besides Lockhart's book & reports see Chin. Repos., Vol. XIV, p. 177 & Vol. XV, p. 402.

(277) Lockhart, l.c., p. 25.

fund provided for gratuitous dispensation of internal medicines issued in rotation by different apothecaries' shops in the city. A large number of patients, 300-500 on each prescribing day, attended this establishment which was kept open, apparently during the summer months only, for several years. Lockhart notes that the undertaking was conducted "with spirit and energy" and the attention and interest bestowed upon the patients "were very commendable." The attendance at the foreign hospital was not diminished by the Chinese undertaking as the patients of the former came mainly from a distance and their cases were generally of a more serious character.

Medical work at *Foochow* (福州) opened to foreign trade in 1844, was started on a small scale in autumn 1847 with the arrival of the Rev. Moses C. White of the Methodist Episcopal Church, who opened a dispensary in February, 1848. He handed over the work in 1851 to Dr. Wiley and left in the following year (1852), afterwards becoming Professor of Pathology at Yale.

Dr. (afterwards Bishop) I. W. Wiley carried on until 1854 when, after the death of his wife, he brought his children home.

In 1850, the Rev. Wm. Welton, B.A. (Cambridge) and M.R.C.S. (Engl.), arrived in Foochow, being sent out by the Church Missionary Society. Though many sufferers applied for relief, his work was first hampered by the hostility of the literati who resented the fact that Welton had obtained a portion of a temple near their schools as a dispensary. The dispute was finally settled by Dr. Welton removing to another temple nearby. Here he continued with much success until 1856 when his health became so debilitated that he was obliged to seek rest, first at Shanghai, then in England. He did not recover and died in 1858. As we shall see, regular medical work was resumed at Foochow in 1870 when Dr. and Mrs. Osgood arrived (278).

In passing, we must contemplate the activities of the German missionaries in *Kwangtung* province. F. Genaehr and H. Kuester of the Rhenish Missionary Society, sent out to assist Gützlaff, arrived at Hongkong in 1847 and immediately proceeded to the western part of Kwangtung. Possessing, like all German missionaries, some medical training, they distributed medicines during their tours. Mr. Kuester died soon after but Genaehr carried on first at Chanhau (河口) and then at Hoau (荷 叻) in the Kwaishin (歸 善) district as well as

(278) Rep. of the Med. Miss. Soc. for 1848, Hongkong, 1849 & Chin. Repos., Vol. XVIII, p. 505; Rep. of the Med. Miss. Soc. for 1848 & 1849, Canton, 1850 & China Rep., Vol. XVIII, p. 55; Whitney, Ch. Med. Miss. J., 1889, p. 85, 1897, pp. 91, 180; Scarborough, Chin. Recorder, Vol. V, p. 137.

when touring. Among the helpers who joined him was W. Lobscheid who arrived in 1848 (279).

In 1854, a regular dispensary was opened at Phu-lu-wui in the Kwaishin district under the auspices of the Berlin Missionary Society, and was taken over in the year following (1855) by the Rev. Heinrich Goecking, M.D. He continued his labours until 1864 when he left for Europe and the dispensary was closed. Genaehr, with two of his children, died in the same year of cholera, infection being contracted from an outcast woman he had valiantly taken into his house to nurse (280).

At about the same time the German missionaries started the work described above, some medical activity was commenced by Catholics in *Hupeh* Province. As the Rev. Father Lunter kindly informed us, in the year 1850 or a little earlier, a *Chinese pharmacy* was opened by the Mission at Wuchang. The primary purpose of the establishment was to prepare medicines necessary for the work among the foundlings but the priests also drew from the store to treat poor patients. A similar institution was opened at Hengchowfu (*Hunan*) in 1857.

We turn now to the early medical life at *Hongkong* which had by the Treaty of Nanking (1842) become a British colony. All early reports at our disposal agree that at first the health of the foreigners, both military (281) and civilian, was bad. Colonial Surgeon Wm. Morrison, in his report for 1847, says that the first colonisation was attended with disastrous consequences to his countrymen and the soldiers (282). The mortality on the floating Naval hospital *Minden* (at first in charge of Dr. Alfred Tucker) was 315 out of 1,000 (283).

The diseases most frequently met with were apparently periodic fevers and dysentery. The latter disease was, according to Hobson (284), rare among the Chinese while very fatal to Europeans. He explains that

(279) As mentioned already, Lobscheid published in 1855 a tract on vaccination and in 1861 a third edition of *Devan's Vocabulary*. In 1864 he added a *Tourist's Guide and Merchant's Manual*, containing chemical and pharmaceutical terms in Chinese (Thomson, *Ch. Med. Miss. Jl.*, 1887, p. 45).

(280) *Chin. Recorder*, Vol. VII, p. 197; *A Century of Protestant Missions*, p. 492 & foll.

(281) In 1843 for instance, plenty of sickness prevailing among the detachment of the 55th regiment quartered in the West Point barracks is recorded (*Chin. Repos.*, Vol. XII, p. 446).

(282) *Chin. Repos.*, Vol. XVII, p. 813.

(283) *Ibidem*, Vol. XIV, p. 445 & Vol. XV, p. 124.

(284) 1844-45 Report, quoted by Lockhart, *l.c.*, p. 204.

this may be accounted for by their (the Chinese) temperate habits and unstimulating food, combined with a temperament congenial to the climate and their habits of life; whereas the European partakes more of the phlogistic character, and when unduly stimulated by too full a diet, and alcoholic drinks, and in the case of sailors, from the use of native spirit, sam-shoo, it is not surprising, when also there is often great carelessness in not avoiding exposure to the sun, that there should be such destruction of life amongst this class, from this form of disease.

Moreover, a special *Hongkong Fever* was believed to exist. Dr. Morrison (282) touching upon this expresses his belief that it was a modified form of cholera rather than malaria. Later (1850) when a somewhat similar malady was observed at Canton, variously considered as cholera, bilious fever and plague (285), the illness prevailing at Hongkong in 1843 and sometimes carrying off its victims within 2 days, was even called yellow fever (286). It is difficult to establish what this outbreak really was but it may be remembered that Lockhart in 1849 testified (287) to the presence of a "bilious remittent fever" in Shanghai from which, as well as from dysentery, large numbers of Chinese died. Many foreigners were also afflicted but apparently few in a fatal form. At the same time Lockhart expressly remarks upon the absence of cholera.

It would seem that a governmental medical service was instituted at Hongkong at once. The first Colonial Surgeon ascertainable was Dr. Francis Dill who died soon after his appointment. He was succeeded first by Dr. Young and then by Dr. Morrison, F.R.C.S. (282). On August 16, 1843, a Committee of Public Health and Cleanliness was appointed by the Governor (288). Probably on the initiative of this body a long ordinance for "Preservation of Good Order and Cleanliness within the Colony of Hongkong" was promulgated on March 20, 1844. The Military Hospital, which had been established as early as 1841, moved in 1843 from a matshed into a proper building (289).

In addition to the medical officers and missionaries, the Colony was evidently from the first well provided with private practitioners. In 1845 the medical men at Hongkong formed a *China Medical and Chirurgical Society* to which also some laymen "who held a relationship to medicine by early education" were admitted. The main objects of this Society were:—

(285) The relation of this outbreak to plague will be discussed in a subsequent chapter.

(286) Chin. Repos., Vol. XIX pp. 288, 343.

(287) Ibidem, p. 300 & Book, p. 243.

(288) Chin. Repos., Vol. XII, p. 446. This body was presumably composed of laymen mainly as Dr. Tucker in 1845 expressed his surprise that no Board of Health had as yet been formed (Chin. Rep., Vol. XIV, p. 445).

(289) Chin. Repos., Vol. XIII, p. 222; Cadbury & Jones, l.c., p. 90.

1. The bringing into more intimate intercourse the medical brethren in China, for the sake of giving and receiving information on medical and surgical subjects;
2. The formation of a library (and museum);
3. The discussion of topics relating more particularly to the diseases prevalent in China and to the native *materia medica*.

Dr. Tucker was elected President of the Society, Dr. Hobson, Secretary, and Dr. Young, Librarian and Treasurer, while Drs. Dill, Barton and Holgate were on the committee. The contribution of the members was \$12.00 per annum or \$1.50 monthly. It was proposed to hold a meeting every month. At the first meeting an interesting address was delivered by Dr. Tucker on the advantages to be gained by a medical association. At the same time a cursory review of the diseases incidental to Europeans in China was given (290). Dr. Tucker praised the great facilities afforded by the medical gentlemen in charge of the Chinese Missionary Hospital to specialise in ophthalmic diseases and to get acquainted with cases of skin disease. They also put their library at the disposal of the members. The attitude of the Seamen's Hospital was likewise most friendly. Dr. Tucker finally expressed the hope that a medical school would soon be formed (291).

The untimely death of Drs. Tucker and Dill to whose initiative the existence of the Society was mainly due led soon to its dissolution (292).

Repeated allusion has been made already to the establishment of a Missionary Hospital at Hongkong. This was erected with the money realised from the sale of the Macao plant on a site given for the purpose by the Governor, Sir H. Pottinger. It possessed, besides dispensary and wards for 42 in-patients, residences for *two* surgeons so that there might be accommodation for a newcomer, *locum tenens* or the like (293).

The hospital was actually opened under Dr. Hobson's care on June 1, 1843, and soon began to prosper. The doctor notes in a report dated June, 1844 (293) that a much greater number of patients than anticipated had applied, the total up to May 31, 1844, being 3,924 (566 in-patients). He expresses his thanks to several foreign practitioners who had assisted him and his praise to the two Chinese assistants,

(290) Dr. Tucker as well as Dr. Dill soon afterwards dealt more fully with this subject (see Chinese Repos., Vol. XV, p. 124). Evidently post mortems were performed in cases of chronic dysentery. As a result of his study Dr. Tucker suggested the founding of a sanitarium on a suitable site.

(291) See Chin. Repos., Vol. XIV, pp. 244, 445.

(292) Communication by Hobson to the Committee and Friends of the Hongkong Med. Miss. Soc., dated Dec. 1, 1847 (see also Chin. Repos., Vol. XVII, p. 254).

(293) Report of the Med. Miss. Soc., etc., Macao, 1843 (Chin. Repos., Vol. XII, p. 188); Chin. Repos., Vol. XIII, p. 369.

especially to Apun who had been three years with him. This man had a good knowledge of both Chinese literature and English and had been rewarded by a certificate for the proficiency he exhibited in a rigid examination before Dr. Anderson and other foreign doctors on the anatomy, diseases and operations of the eye (294).

Dr. Hobson deplores the lack of *post mortem* facilities, but at the same time strongly advocates the cause of medical education, the pupils to be recruited from the foreign educational establishments in Hongkong. Hobson thus continues:—

This leads me to express the interest I feel in the establishment of a medical class of from six to ten boys; and I embrace this opportunity of soliciting the countenance and support of the gentlemen of the Committee to the proposed measures.

Dr. Hobson proposed to begin with their instruction in premedical subjects (physics, chemistry, biology, etc.) and then to continue with hospital practice and occasional anatomical demonstrations. The committee in its introduction to the report approved of the scheme and stated that the matter had been taken up with the trustees of the Morrison Education Society who in their turn instructed the principal of the school, Dr. Brown, to make arrangements with Hobson directly.

The demand upon the hospital was such that in 1845 additional wards had to be built. Cases of all kinds were readily treated but those with ophthalmic affections greatly preponderated. The most fatal malady met with was continued fever which principally attacked newcomers to the Colony. Hobson speaks highly of the patients who—though not watched in any way—practically never left the hospital “without first asking permission and returning thanks.” He continues to say that inasmuch as they are

inoffensive, quiet, and of temperate habits, little management is required. Their diet is simple, their constitution good, and united to a rare susceptibility to medicinal agents, with no prejudice from caste, a better class of patients probably does not exist.

Hobson again lauds Apun of whom he says:—

He is quite competent to take entire charge of an ophthalmic hospital, and I hope before long to see him established in practice for himself, and conducting a hospital on a similar plan to this in one of the populous cities of the neighbourhood (295).

The failing health of Mrs. Hobson made it necessary for the doctor to accompany her to England in autumn 1845; she died just prior to reaching that country. During his absence the hospital was kept open, first by Drs. Tucker and Dill and, after the deplored decease

(294) Ibidem, pp. 369, 603; Lockhart, l.c., p. 140.

(295) Lockhart, l.c., p. 203 & foll., p. 140.

of both, by Dr. A. Balfour(296). The Rev. V. Stanton was in residence and looked after matters financial. It was due to an application made by him that the Colonial Government gave a yearly subsidy of \$300 in appreciation of the fact that the hospital cared for cases of injury and loathsome disease brought in by the police(292).

Dr. Hobson returned from England in 1847 and married in the same year a daughter of Dr. Morrison(297). In a communication addressed on December 1, 1847, to the Committee and Friends of the Hongkong Medical Missionary Society(292), Dr. Hobson reported that since opening of the hospital four years ago 12,139 patients had been treated, among them comparatively more in-patients and serious cases than admitted at the other stations. At the same time he offered his resignation as the directors of the London Missionary Society were anxious to resume work at Canton, where since Morrison's death no English missionary had resided. Dr. Hobson added that Dr. Balfour had again volunteered to carry on the work of the Hongkong hospital for the time being. Turning to the subject of medical education, he noted that the members of the Medico-Chirurgical Society had pledged themselves to give the utmost assistance to this project. Unfortunately this association had ceased to exist and no pupils with suitable preliminary training were available. Further, Dr. Hobson had been able to collect but £350 from personal friends in England which sum would be "far short of what would be required to carry the original project into effect." For these reasons and the unexpected change in his plans he was obliged to abandon the formation of the proposed school. The appropriations intended for general use would be spent for fitting up the new Canton Hospital, while those given specifically for education would be devoted to that purpose on a modified plan.

Early in 1848, Dr. H. J. Hirschberg of the London Missionary Society (who had arrived the year before) took charge of the Hongkong Missionary Hospital which had been kept open through Dr. Balfour's endeavours. The number of applicants, which had somewhat fallen during the absence of a resident physician, rose again. Moreover, two new dispensaries were opened, one on March 20, 1848 at Kowloon, the other on May 10 of the same year at the Bazaar chapel of the London Missionary Society. The former was established in Chinese territory in a schoolroom where a Chinese convert had started to teach. No permission was asked from the authorities but they silently approved of the dispensary and some officers sought

(296) Dr. Balfour was apparently in charge of the Seaman's Hospital (see *Chin. Repos.*, Vol. XV, p. 159).

(297) *A Century of Protestant Missions*, p. 661.

advice. In both dispensaries patients were seen once every week; at the Bazaar chapel especially many better class people attended. The total attendance in hospital and dispensaries during the period February 17—October 1, 1848, was 1,775, the monthly expense, exclusive of medicine, but \$40. Dr. Hirschberg continued at Hongkong until the middle of 1853 when he removed to Amoy (see above) (298).

To complete this description of early medical activities at Hongkong mention must be made of the opening in 1851 of a Chinese institution called Ts'z I. It can be gathered from an 1896 Report on the Tung Wah Hospital that the original idea of the Ts'z I was to serve as a common ancestral temple where the memorial tablets of poor Chinese dying in the Colony might be placed pending their removal to the native places of the deceased. Gradually the institution, which had been erected on a piece of ground granted by the Government, developed into a kind of hospital to which patients were taken in a moribund condition. We shall return to it when dealing with the foundation of the Tung Wah Hospital.

Dr. Hobson found after considerable difficulty a suitable house at Canton in the Kam-li-fau district, $1\frac{1}{4}$ miles northwest of the foreign factories. This building, situated on the river bank in a populous neighbourhood well away from the foreign concessions, had been formerly used as a pack-house so that considerable repairs were necessary to turn it into a hospital. Therefore only part was rented at first and a dispensary opened on April 1, 1848. Patients, who were seen every alternate day, soon numbered one hundred or more on admitting days. Consequently the whole house was taken possession of and in addition to a hospital a residence for the physician and a chapel were arranged for. After these alterations had been completed, Dr. Hobson moved in with his family on June 8, 1848. New patients were received three times weekly while a fourth day was entirely reserved for operations (299).

In his 1848-49 report (299) the doctor makes some interesting nosological remarks. Referring to the subject of insanity he said that

considering the phlegmatic temperament and temperate habits of the Chinese, it might be anticipated that this malady is not of frequent occurrence, and I think further inquiry will prove that insanity prevails to a much less extent in China than in Europe.....Lunatic asylums are unknown in China.....

The frequency of tumours amongst the Chinese he thinks more apparent than real. While such growths are quickly removed in Europe, they are scarcely, if ever, touched by the Chinese practitioners.

(298) Reports of the Med. Miss. Soc. for the year 1848, Hongkong, 1849; Lockhart, l.c., pp. 208-210; Chin. Recorder, Vol. VII, pp. 174-201.

(299) Report of the Kam-li-fau Hospital for the period April, 1848—November, 1849, Chin. Repos., Vol. XIX, p. 300; Lockhart, l.c., p. 179.

The consequence is, that the tumours go on increasing both in number and size from year to year, thus attracting attention and producing the impression of greater frequency among the people.

Several cases of tumours were operated upon and in general the attendance was a most gratifying one. Curiously, in 1848, more female than male patients were cared for. Some of those treated gave money to procure rice and fuel for needy in-patients(300).

The information about pupils was not very satisfactory. Chan Atsung, who had accompanied Dr. Parker to America and had afterwards joined Hobson's hospital, resumed opium-smoking and later, died miserably. Chan Apun, after having received a thorough education had become an interpreter in a Canton business house! A third pupil San A-on proved indolent and unfit so that he was sent back to his home in Cochin—China. One pupil, called Awing, evidently thrived better; he is mentioned as having saved a patient from opium poisoning.

In a notice on the Kam-li-fau Hospital published in 1851(301) it is said that the *attendances* during 1850 totalled 25,497 while the expenditure for 14 months was \$372.11. Again, a small amount had been subscribed by Chinese patients. It is added that medical lectures were delivered three times weekly during the winter (to the pupils?).

Early in 1854 it was necessary to find larger premises and a house conveniently situated near the old one was rented after many difficulties. The landlord was even imprisoned and fined for having let his property but was set free through the intervention of the British Consul. When the new building was finally opened the attendance was greater than ever, so that on the four prescribing days the hospital looked like a market(302).

In the midst of this work much help was given to Dr. Hobson by his friend Dr. Walter Dickson. Moreover he had by that time gained a most valuable assistant in his pupil Ho-king-mun who performed all small operations and assisted in prescribing. He also took a conspicuous part in treating the numerous cases of opium poisoning (attempted suicides, especially by young females).

Hobson again referred to the problem of leprosy, noting that

it is gratifying to state that the seeds of the *Chaulmoogra* are found to be of real service. Dr. Mount of Calcutta drew my attention to this fact, and

(300) Commenting upon this the Editor of the Repository thinks that such practice should be encouraged and adds: "That the reports already published exhibit few instances of substantial gratitude from the patients is not, we are willing to think, wholly owing to the indifference and selfishness of the Chinese, but somewhat to the general impression that no pay can be given, as well as that nothing is expected."

(301) Chin. Repts., Vol. XX, p. 152.

(302) Lockhart, l.c., p. 183.

sent me a quantity of the seeds..... The remedy is known to the Chinese under the name of Ta-fung-tsze for the seeds, and Ta-fung-yew for the oil; but those who have any experience of its value keep it a secret for their own profit (303).

The resources of the new hospital were severely taxed during 1854 and 1855 when, owing to the fighting near Canton between the Imperialist troops and the Triads, numerous wounded were brought in for treatment. The strain of this work proved too much for Dr. Hobson so that in December 1854 he was obliged to visit Shanghai so as to recruit his health. During his absence, which lasted a month, the work was most efficiently carried on by Ho-king-mun and staff under Dr. Dickson's supervision.

It is interesting to note that Chinese practitioners were provided by the Government to care for the sick and wounded outside the hospital. Those attached to militia were paid *according to the number of cures they effected*. Naturally they preferred to send all serious surgical cases to the hospital which prescribed in 1855 for nearly 30,000 patients, 10,000 being new ones.

The year 1856 saw the hospital as busy as before. The accommodation had been originally intended for 50 patients(304) but often much more than that number had been harboured. Now two wards were added, bringing the number of beds to 100 (305). Major operations, including some for bladder stone, were frequently performed, this branch of the work being under Dr. Dickson. As heretofore all minor operations were undertaken by the Chinese house-surgeon. Dr. Hobson notes that the Chinese Government thus made acknowledgment of the services of the latter:

Quickly announce to Ho-king-mun, of such an honorable house, that the Governor-General of the two provinces, and the Lieut.-Governor have received the Imperial will, that the individual recommended above be rewarded with a white crystal button, corresponding to the sixth rank of an officer of the government.

Hobson adds to this proclamation(306) that while the title of honour yields no emolument, it confers social status and exempts the bearer from being seized by the police.

Dr. Hobson refers at the same time to three young men practising medicine at Canton who had received some instruction in the hospital. He regrets that they did not stay long enough for thorough training but says that "one of them is gaining some celebrity for his

(303) Ibidem, p. 184.—Hobson published in 1852 a paper on Leprosy in China and the East in the Proceedings of the China Branch, Royal Asiatic Soc. Another report on this appeared in the Med. Times & Gazette for June 2, 1860.

(304) Chin. Recorder, Vol. VII, p. 174.

(305) Lockhart, l.c., p. 192.

(306) Quoted ibidem, p. 191.

successful couching of cataract." This man, with another, had in 1855 opened a small hospital in the country to receive wounded militia and both were well remunerated for their efforts. Unfortunately some quacks also practised who claimed to have been trained in the hospital.

Successful as Hobson's hospital practice was, its importance is surpassed by another undertaking which he started at Kam-li-fau. This was the compiling of *Chinese textbooks on medical subjects*, from various well-known English works. Hobson's own remarks upon his literary activities are embodied in the 1858 Report of the Shanghai Hospital (307):—

Deploring that "medical science in China is at a low ebb" he continues:—

I have been endeavouring to contribute my mite to the object of instructing the Chinese in medicine, and have just completed a series of volumes on medicine and the collateral branches both for the instruction of native Practitioners and to diffuse general information on these subjects, with the hope also that, ere long, the Chinese government will do something to encourage the study of the medical art.

After dwelling upon the erroneous views prevailing in regard to anatomy and physiology he says that

in this condition of things, it seemed very desirable to introduce the well-established principles and facts of western medical science to prepare the way for changes in the present system of China. Under this conviction a work was prepared in Canton, eight years ago, on the subjects of anatomy and physiology, avoiding all theoretical opinions. This has been extensively read and very favourably received, and has proved a good foundation for what was to follow (308).

The next treatise was on the properties of air, light, heat and electricity, and the elements of astronomy and natural history, designed as an introduction to these varied branches of natural phenomena (309).

(307) Lockhart, l.c., p. 154 & foll.

(308) Outline of Anatomy and Physiology (全體新論), Canton, 1850. Lockhart (307) thus analyses this work:—After some general remarks on the importance of the study, it commences with the bones, and a comparison of the skeleton of various animals, the ligaments and muscles, followed by a description of the brain, the spinal cord, and the nervous system, of which the Chinese are wholly ignorant. After a short account of optics and acoustics, the organs of sense are treated of, with their various adaptations in the case of the lower animals. The viscera, with their functions, are described and illustrated. The heart and its action, the blood vessels and absorbents, the circulation of the blood, its purification in the lungs, occupy the most important chapter in the work..... Remarks on the urinary organs and those of reproduction complete the whole..... The concluding pages are devoted to a brief notice of psychological distinction, suggested by a consideration of the material structure.

(309) *Natural Philosophy and Natural History* (天文略論) formed the subjects of the next publication. The exposition of the former is orderly and concise, embracing the subjects usually treated of, and is of particular value..... The chapters on astronomy are much sought for and eagerly read by the Chinese, who are very desirous of learning the laws of natural science. Those on natural history also are particularly interesting (Lockhart, l.c.).

This has been succeeded by a work on the principles and practice of surgery (310); by another on midwifery and the diseases of children (311); and by a fifth, on the practice of medicine and materia medica (312), together with a medical vocabulary, in English and Chinese, to explain and fix the terms used (313). The illustrations show at once the subjects treated of, and I have spared no pains, by the aid of an intelligent native, to make these works accurate, perspicuous and useful.

Although attended with difficulties, it is still quite practicable to make every subject with which we are ourselves acquainted as clear and as expressive in Chinese as in English. Both religious and scientific works should, however, only be made by persons who have been some time in the country, and conversant with Chinese authors. The great desideratum for a translator is a good and fixed nomenclature on every branch of science. The language admits of a satisfactory and distinct explanation of most new terms; where it does not, these must be transferred.

Lockhart (307), in an enthusiastic appraisal of the books said he does not know

which most to admire, the beauty of the works themselves, and the successful manner in which they have been put forth, as to the letter press and the illustrations (314), or the untiring labour of the writer, not only in such an excellent compilation from various English authors, but in rendering it into Chinese, in so admirable and intelligible a manner.

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- (310) *First Lines of the Practice of Surgery in the West* (西醫略論). In three parts (the third containing a classification of medical agents). Shanghai, 1857.—This treatise, besides showing the benefits of surgical education, sets forth the entire subject of surgical practice, and is, like the former ones, well illustrated. Perhaps this work may be regarded as the best of the series, as it is certainly the most adapted for direct utility. Immediately upon its publication people of all classes were eager to possess it, and doubtless, its rules for the treatment of various affections will be followed by many. The book will be one of frequent and studious reference, and will have a powerful influence in guiding many minds in their endeavours to aid those who hitherto in China have been left unattended to and neglected (Lockhart).
- (311) *Treatise on Midwifery and Diseases of Children* (婦嬰新說), Shanghai, 1858. This work..... is an important contribution. This practice is in China left entirely to women, who, in cases of difficulty, are utterly helpless. In this treatise plain, simple and concise directions are given for the proper treatment, and illustrations are added, both of natural and difficult labour (Lockhart).
- (312) *Practice of Medicine and Materia Medica* (內科新說) (appended list of medical terms in English and Chinese), Shanghai, 1858.—This commends itself to the Chinese physician in an especial degree. Observation has taught them much concerning the empirical treatment of certain diseases, and, in many cases, their rules and directions are commendable as being well adopted. This volume gives them information, not only interesting, and which they can readily understand, but also explains the use and preparations of many medicines, of which, formerly, they had no knowledge (Lockhart).
- (313) *Medical Vocabulary in English and Chinese*, Shanghai, 1858 (See Thomson, *China Med. Miss. Jl.*, 1887, p. 115).
- (314) The engravings illustrating the books, many from original drawings made by Hobson's friend and voluntary helper Dr. Dickson, were executed by Chinese artists in Canton. (See Lockhart, *l.c.*, p. 185 & Henderson, *The Medicine and Medical Practice of the Chinese*, *Proceedings North China Branch Royal Asiatic Society*, 1864).

The greatest compliment to the author lay perhaps in the fact that his books were several times republished by the Chinese—the Anatomy and Physiology first at the instance of the Viceroy of Canton. He had the illustrations recut, printed separately, and made up into rolls according to Chinese custom(315). Other editions followed; the prefaces to some of them, as quoted by Henderson(314) are curious to read. The subsequent volumes were likewise reprinted as soon as they appeared. Further, all the books were published in Japan where they appeared in fourteen thin octavo volumes both in Yedo and Miaco. Henderson claims that here also they were published in the Chinese language “with interlineations and various notes in Japanese, bearing on the meaning of the text.” Before Dr. Hobson left Shanghai (see Chapter VI), the foreign merchants expressed their approval by subscribing the sum of \$2,000 for a large new edition of the series(315).

Hobson's books remained for many years the standard works in Chinese, and their influence, not only upon the Chinese in touch with western medical men but upon scholars in general, cannot be over-rated. As Lockhart puts it, the books were

of incalculable benefit to the Chinese, and were this all that Dr. Hobson had accomplished, it would be worth the labour of a lifetime.

The anatomical work of Wang Ch'ing-jen which appeared simultaneously with Hobson's Anatomy and Physiology, has been dealt with in Book One of this History(316). Wang Ch'ing-jen has to be classed among the old-style physicians because his upbringing prevented his breaking away from some of the traditional teachings of his day. At the same time his thirst for knowledge as well as his perseverance in original research entitle him to an honourable mention in the modern medical history of China.

(315) Lockhart, l.c., p. 160.

(316) Chapter XXII.

CHAPTER VI

PERIOD 1856—1865

CHARACTERISED BY INTENSIVE INDIVIDUALISTIC EFFORTS

Second Anglo-Chinese war—Destruction of Canton Missionary Hospital—Closing of Kam-li-fau Hospital—Foreign Military hospitals—Medical work in Gordon's 'Ever-Victorious Army'—Kam-li-fau Hospital reopened under Dr. Wong Fun—Dr. Kerr resumes work—Dispensaries in out-stations—Kam-li-fau Hospital taken over by Dr. Kerr—Resumption of work at Amoy under Dr. Carnegie and his successors—Continuation of medical missionary activities at Ningpo and Shanghai—Hospitals for foreigners and early public health activities at Shanghai—Extension of Western medical work to Swatow and Peking—Description of 1862 cholera epidemic at Peking and sketch of the history of this disease in China—Western medicine introduced into Tchengchow and Chefoo, Chinkiang, Hankow and Formosa.

We come now to another crisis in the intercourse of China with the foreign powers, leading to the war waged, with interruptions, between the years 1856 and 1860 and resulting in the conclusion of treaties which reaffirmed, among other things, the right of foreigners to build or open hospitals and similar institutions(317). This specific clause, as well as the security afforded to foreigners by the various treaties, gave a mighty impetus to their medical work. Before dwelling upon this, we must see how far the war interfered with the organisations already existing. The military operations being mostly restricted to Canton and its environs, the work at other medical posts appears to have been carried on without much disturbance.

In *Canton*, however, it was completely interrupted. The Missionary Hospital had to close its doors in October, 1856, but since the

(317) As Latourette in his interesting analysis of the effects of these treaties upon missions (see l.c., p. 277) explains, this privilege was not expressly restricted to the treaty ports. On the other hand, the right to settle down "at other places" (British treaty) was not specifically guaranteed. The missions were as a rule not backed in such claims by their own governments and had to rely upon the goodwill of the local authorities rather than upon anything else.

beginning of the year, 10,050 patients had been seen and numerous operations, including the first successful lithotomy, had been performed. On the 29th of the same month the Wai Tsai dispensary, where most of the medicines were kept, was destroyed by fire(318). Up to that date 13,483 patients had been attended to. The hospital also became the prey of fire when, on December 14, 1856, the foreign factories were burnt by the Chinese in retaliation for the bombardment of the Viceroy's palace(318, 319). While it is sad to reflect that the monument of Parker's and Kerr's great deeds and of Howqua's generosity perished so ingloriously, the building had served its time and would soon have had to be relinquished anyhow. Kerr, when reporting upon the loss (318), goes on to say that the arrangements and ventilation of the house were ill adapted to its purpose and that it was too far removed from the river.

Dr. Kerr retired at first to Macao but on February 12, 1857, went on leave to the United States. At the 19th. Annual Meeting of the Society, held in his absence under Dr. Parker's chairmanship at Macao (February 21, 1857), it was resolved to express thanks to Kerr, Kwan Ato and Lum Ats'ung. Further it was agreed that

in consideration of the long-continued services of Kwan Ato and the present suspension of the operations of the Ophthalmic Hospital, he be allowed the sum of \$10 per month from the funds of the Society during the current year.

Kwan Ato enlisted soon afterwards as surgeon to the Imperial forces sent from Kwangtung to fight the rebels in Fukien. Here he narrowly escaped death when the rebels surrounded a city in which he had opened a military hospital. For his services as the first modern-trained surgeon to the Chinese military forces he was rewarded with a crystal button and the title of mandarin of the fifth rank (320).

Hobson's hospital did not fare any better than the Missionary Society's establishment. Being situated in the vicinity of some large batteries in the western suburbs, the British Consul insisted upon evacuation in October, 1856. Scarcely anything was removed, as hopes for an early adjustment of the difficulties were entertained. For some time the Chinese in the neighbourhood voluntarily stood watch over the premises and their contents. But their protection had to be gradually withdrawn and soon only the bare walls remained(321). Dr. Hobson, who had left in October, 1856, for Hongkong, went in February of the year following (1857) to Shanghai where he saw his

(318) Report of 3 Annual Meetings of the Med. Miss. Soc., etc., Macao, 1857.

(319) Chin. Recorder, Vol. VII, pp. 174-201.

(320) Report of the Med. Miss. Soc. for 1860, Canton, Friend of China Press, 1861.

(321) Lockhart, l.c., pp. 192, 195-96.

work on Surgery through the press. Towards the end of the year, when Dr. Lockhart was compelled by domestic circumstances to return for a while to England, Hobson took charge of the Shanghai Hospital for Chinese until about a year later when his own health necessitated a furlough. Leaving for England early in the year 1859 he settled there until his death in 1873 (322).

As in the first, so in the second war, *military hospitals* were established for the *European* troops wherever necessary. Thus the French General Montauban organised a military hospital next to the St. Joseph's Church of Yang-king-pang, Shanghai, which was kept open as long as there were French detachments in the city but had evidently ceased to exist by 1864. It appears that medical aid was not generally given to civilians by this institution (275, 323).

During the occupation of Tientsin, the British established there in January, 1861, a small hospital, the doors of which were open also to the general public, for the wounded and sick of their Chinese Coolie Detachment. Though this was only a temporary undertaking, it is of historical importance insofar as Viceroy Li Hung-chang here obtained his first insight into the benefits of western medicine. He never forgot the lesson, enabling in 1880 the opening of a hospital in Tientsin, known as the Viceroy's Hospital, and thereafter remaining its generous patron (324).

An interesting event was the organisation of the medical work in Gordon's "Ever-Victorious Army", a well-trained Chinese detachment under foreign officers, engaged in suppressing the Taiping Rebellion during the years 1863-64 (325).

The medical service of the detachment was in the hands of Dr. A. Moffitt, up to that time assistant-surgeon of H.M. 67th regiment, assisted by two other medical officers (326). At the time Colonel Gordon took command, no medical department worth speaking of existed in the force, so Moffitt had to build up an organisation of his own. A stationary hospital and a field detachment were organised by him. The former was first located at Sungkiang and later at Quinsan,

(322) *Ibid.*, p. 196; Thomson, *China Med. Miss. Jl.*, 1887, p. 45.

(323) A French military hospital, opened by reason of the hostilities in Cochin-China, is mentioned as existing at Macao by 1858.—It may be added that in this colony a U.S. Marine Hospital had already been opened before the war; allusion is made to it in connection with the year 1853. (See *Chinese Recorder*, Vol. XIX, p. 522).

(324) *China Med. Jl.*, 1920, p. 808; Brayton Barff, *l.c.*

(325) See Andrew Wilson's book on the "Ever-Victorious Army," London, 1868, Chapter XIV.

(326) The pay of the Principal M.O. was £80 *per mensem* (the same as that of the Second in Command) that of his aides £60 (according to that of the paymaster, adjutants, etc.).

to which latter place the wounded could be conveniently conveyed by boats. Bed-frames "with bottoms worked of cocoa-nut fibre" were procured and a staff of attendants trained. This was managed by a young Chinese scholar with a European education who soon became most expert, especially as a compounder of medicines. The field establishment was organised on the lines still used in the British army medical service nowadays. Usually two large covered boats served as its base, and from here the wounded were brought to Quinsan in Chinese gun-boats.

Some medical statistics of the "Ever-Victorious Army" may with advantage be quoted. Morbidity and mortality from all diseases and from wounds not received in action amongst the Chinese (annual average strength 3,000) during the year commencing April 1, 1863, were as follows:—

	Cases	Deaths		Cases	Deaths
Dysentery	54	7	Bronchitis	25	0
Diarrhoea	690	9	Syphilis primar	6	0
Cholera	2	2	Scabies	66	0
Febris intermittens ..	1,755	8	Phlegmone & ulcus ..	99	2
" remittens (327)	1,247	48	Wounds, etc.	138	2
" continua	67	8	Others	17	1
			TOTAL	4,166	87

Wounds received in action during the fourteen months from April 1, 1863 to May 1, 1864 (average strength 3,000 Chinese and 120 foreigners) were as follows:—

	Chinese:	Foreigners:
Total Wounds admitted into Hospital	864	73
Deaths from Wounds and Operations	65	11 (328).

It will be seen that, partly on account of the well-organised work, and partly because the firearms of the Taipings were not of a very destructive nature, the results obtained were excellent. Colonel Gordon, as quoted by Andrew Wilson (329), was always ready to testify

(327) "Intermittent and remittent fevers were by far the most fatal diseases..... The former often yielded easily to anti-periodic remedies, but when it passed into the remittent form it frequently became fatal. At the commencement its most prominent symptom was a burning gastric pain, followed by vomiting and total loss of appetite. In cases about to terminate fatally, headache and vertigo became violent, forbidding the use of quinine and the disease assumed a typhoid character."

(328) Among the wounded treated by Dr. Moffitt was the Ti-Tu (General) Yang who had been wounded in the chest and was given up for lost by his countrymen. The bullet was extracted while the pleural effusion which had taken place "was relieved after a fortnight by a copious expectoration of a pinkish-coloured pus which lasted for two days." Nature certainly helped Moffitt in this as in many other cases!

(329) L.c., p. 268.

that the confidence felt by all ranks of his force in the surgical skill of the principal medical officer was of signal service in nerving their minds for any enterprise, however hazardous.

In the "Lancet" (330) it was stated that

it is impossible to over-estimate the good done by Dr. Moffitt, not only to the force in which he served with so much distinction, but to his profession and country.

Besides Dr. Moffitt and his aides, another British medical man was connected with the "Ever-Victorious Army". This was Dr. (afterwards Sir) Halliday Macartney, later councillor of the Chinese Legation in London. Macartney had come to China as Assistant-Surgeon to H.M. 99th regiment. It was said of him that "he seemed to like the fighting part better than the healing" though he always did his best for his patients. When in Chinese military service, he did not perform any medical work but was at first military secretary to Burgevine, and later in command of a regiment (331).

Taking up our narrative, we may conveniently begin with the Kam-li-fau hospital at *Canton*. After the city had been occupied by the British troops in 1858 (332), the missionaries John Chalmers (London Missionary Society) and J. Cox of the Wesleyan Mission visited this hospital. They found it little injured, but the furniture and most of the woodwork had been stolen. Moreover, it did not seem safe at the time as it occupied a position far from the British garrison. However, a Chinese convert offered his house in Foo-hok-tung street and here a dispensary was opened by Dr. Wong Fun of the London Missionary Society (333).

Dr. Wong Fun (黃寬) or Wong Cheuk Hing (緯卿) is most notable as the first Chinese to have graduated in medicine abroad. Being a native of Heong-san district in Kwangtung, a few miles inland from Macao, he was first a pupil in the school of the Morrison Education Society under Samuel R. Brown. Together with two other Chinese students (Yung Wing and Wong Shing) he accompanied his teacher to America and took a degree in literature. He then proceeded to Edinburgh where—supported by the benevolence of some foreign merchants at Hongkong—he studied medicine from 1848 to 1853. He passed with honours, taking several prizes and, after graduating fifth of his class, took up post-graduate work in pathology and anatomy, receiving the degree of M.D. As a student, he had been under the influence of the Edinburgh Medical Missionary Society.

(330) August 11, 1866.

(331) See the Life of Sir H. Macartney by Sir James Crichton-Browne.

(332) Lockhart, l.c., p. 196.

(333) Chalmers, Chin. Recorder, Vol. VII, p. 174.

As a graduate, he offered his services to the London Mission and was sent to China (334).

Arriving in 1857, Dr. Wong Fun first opened a dispensary in Hongkong but removed to Canton the next year to continue the work of the London Mission as outlined above (333, 335). In April, 1858, the attendance at the dispensary was already 3,300, and in June of the same year, it became possible to re-occupy the old building where the work was continued with great success. In 1859, when 80 beds were available, 430 in-patients were admitted, while the visits at the out-patient department numbered 26,030. Four students were in training and the total expense was \$768 (333). At the same time, Wong Fun took part in the labours of the Canton Missionary Hospital where he performed an embryotomy—considered as the first operation of its kind on record in China (336).

Dr. Wong Fun resigned from the Kam-li-fau hospital in 1860 on account of a dispute over the fraudulent and commercial conduct of some converts (333). Soon afterwards he was appointed by Viceroy Li Hung-chang as medical adviser but—finding no interest in administrative work—he continued for half a year only. Li Hung-chang's aide urged him to remain in office and promised all facilities, but without avail. Thus this appointment, significant of Li Hung-chang's attitude towards western medicine, was not destined to bear permanent fruit. Dr. Wong Fun returned to Canton and engaged in private practice.

After Dr. Wong Fun had given up the work of the Kam-li-fau hospital, it was taken charge of by Dr. Happer who had returned with his family to Canton in September, 1859, and had taken up residence nearby. He carried on until February, 1862, when Dr. J. R. Carmichael of the London Missionary Society arrived (333, 337). The latter continued until 1863 when he went into private practice at another port (Chefoo). The hospital was carried on independently of the London Missionary Society by Dr. G. Dods (apparently a private practitioner). Finally, on September 1, 1865, Dr. Kerr took charge of the establishment (338).

Turning now to the re-opening of the Missionary Society's Hospital, we must first note the return of Dr. and Mrs. Kerr from the

(334) See Lockhart, l.c., p. 142; Chinese Recorder, Vol. XIX, p. 121 and personal information, partly collected by Dr. C. S. Lin.

(335) Thomson, China Med. Miss. Jl., 1887, p. 45.

(336) Report of the Med. Miss. Society for 1860.

(337) The Rev. A. P. Happer continued to work as a missionary until 1891 when failing health compelled him to retire. The founding of the Canton Christian College, of which he became the President in 1887, was mainly due to his efforts (A Century of Prot. Missions, pp. 380, 546).

(338) Rep. of the Med. Miss. Soc. for 1865, Hongkong, 1866.

United States to Macao at the end of October, 1858. With other missionary families, they moved to Canton on November 16, where towards the end of the year Kerr was able to rent a suitable building (*hong*) on Tsang-sha street in the Southern suburbs, fronting the river. After the necessary repairs had been made, the establishment was opened about the middle of January, 1859, and received the name of *Pok Tsai* (Diffusive Benevolence) Hospital (333, 339). The modest sum of \$353 which Dr. Kerr had collected in the United States, was spent upon surgical instruments and apparatus, while the amount necessary for furniture was included in the total annual expense of \$484! Only 59 in-patients were admitted, but attendances at the dispensary amounted to 13,186, more than a third of them being females. Dr. Kerr was assisted by Drs. Walter G. Dickson, Wong Fun and Lum Ats'ung. The latter had become so proficient in surgery that an operation for breast cancer was entrusted to him.

In addition to his pamphlet on Vaccination (see Chapter III), Kerr published in 1859 a *Tract on Fever and Hernia* (Canton, 6 leaves). Here the use of quinine in intermittent and other fevers was discussed and the truss recommended as a relief for ruptures. At the same time, a report on the activities of the hospital was printed in Chinese in order to give information and solicit subscriptions (333, 339).

During the year 1860 great progress was made(320). A sum of almost \$1,300 was spent in improvements upon the hospital building. Seven wards were made available with accommodation for 60 patients—males and females being entirely separated. As before, out-patients were attended three times weekly (those coming to chapel, on Sundays also). Moreover, an attempt was made to open a dispensary at Fatshan (佛山), 15 miles west of Canton in a house lent for the prescribing days by the Rev. Piercy. The result was encouraging and it was resolved to continue this work. At the same time, preparations were made for opening another out-patients station at *Shiu-hing* (肇慶), the old capital of the province situated on the West River 90 miles from Canton, to be carried on by the Rev. R. H. Graves. This worker, supported by the Southern Baptist Convention of America, was the son of a physician and had himself received medical training before becoming a missionary(340). Arriving in China in 1856 (335), he had evidently first opened a dispensary at Tai Sha (340).

Dr. Kerr continued to have the assistance of his colleagues, including Drs. Wong Fun and Dods. He also considered himself "for-

(339) Dto. for 1858 & 1859, Macao, 1860.

(340) See his *Personal Reminiscences*, Chin. Recorder, Vol. XVII, p. 432.

tunate in securing the services of the Medical Assistant Kwan Ato." In this connection he states that Kwan Ato's

long association with the Ophthalmic Hospital has made his name familiar to all who have known anything of that institution, and his intelligence and gentlemanly bearing, as well as his surgical skill, have commanded the respect of all who know him.

The financial situation of the Society was secure. A balance of over \$2,000 was on hand and the modest current expenses of about \$1,000 (including \$108 for rent and \$250 for Fat-shan) were almost covered by the year's subscriptions, nearly half of which were given by Howqua and other Chinese. The first instalment of an indemnity granted by the Chinese Government for the hospital's losses during the war also came to hand(341).

Dr. Keer reported in 1861 (342) that a well-situated hong had been procured at a moderate rent in Fat-shan where patients were prescribed for once weekly in spring and autumn, fortnightly during the hot season. This work involved much hardship, as he had to start at three in the morning and, after a journey of 5-6 hours, attend to 200-300 patients and then travel back again. However, much of the work at Canton was done by Kwan Ato, constantly employed at a salary of \$128 *per annum*, who performed most of the 250 operations. Besides him, three pupils were at work who received a few dollars monthly as wages.

We have seen formerly how money to buy rice and fuel was occasionally given by the missionary hospital to poor patients. Now a limited number of poor or friendless patients *was supplied with food* at a cost of 50 cash per person each day. A still more important fact is that a few of them were provided (at the same cost) with *nurses* as well. Unskilled as these casual workers certainly were, this first attempt at a nursing service is of much interest. Up till then, the care of the sick had practically always been left in the hands of relatives and friends, though pioneers like Parker did not hesitate to sit up for nights at the bedside of some patients upon whom they had performed serious operations. Dr. Kerr appealed for special contributions to enlarge these activities.

Another interesting point is that—apparently for the first time—*photographs* as well as paintings of interesting cases were made and paid for.

Dr. Graves reported at the same time(342) that he started regular work at Shiu-hing in February, 1861, first at the back part

(341) A claim for these had been made through the American consul in 1857 (318).

(342) Rep. of the Med. Miss. Soc. for 1861, Tung-Hing Office, Honam, Canton, 1862.

of a shop, then in better premises. Three days of each Chinese month were fixed for seeing out-patients while vaccinations were done every Monday. A total of 3,060 visits were paid to the dispensary, about half of the patients suffering from eye diseases. Minor operations were performed, serious surgical cases being sent to the Canton hospital.

The work at Canton as well as the two dispensaries was successfully carried on during the year 1862 (343). Dr. Kerr dwells upon the frequency of syphilis and *opium smoking*. In his opinion, only few people addicted to this drug were permanently reformed and he emphasized the importance of having proper asylums for their treatment.

Four pupils were under instruction; two of them had been long enough in the hospital to be of valuable assistance, especially in dispensing medicines. Dr. Kerr adds that

it is considered an important part of the objects of the Hospital to educate young men in the science and art of medicine and surgery. This cannot be done to the extent desired, but the practical knowledge acquired by the pupils is such as places them far in advance of native physicians in the treatment of many forms of disease, and specially in every department of surgery.

As proof how eagerly Dr. Hobson's books were read at that time, a letter from a Chinese practitioner may be mentioned. Having learnt about blood transfusion from Hobson's Physiology, he wanted to become familiar with the method.

In his Report of 1863 (344), Dr. Kerr complained of certain unsatisfactory features of the hospital building; thus the cooking room was too near the main building (the smoke being rather harmful to the eye patients) and was common to both male and female patients. At the 25th annual meeting of the Medical Missionary Society where this report was read, a special committee was elected to consider the question of a new hospital building; at the same time, the sum of almost \$3,000, previously subscribed for this special purpose by both foreigners and Chinese, was acknowledged. The latter also contributed in some degree to the regular budget of the hospital and to keep them interested, the annual report was published in Chinese as well as English (4,000 and 400 copies respectively).

A new dispensary was opened in connection with the Rhenish Missionary Society at *Shek-lung* (石龍), a large market-town 40 miles east of Canton on the East River. This was under the Rev. Adam Krolczyk of the Rhenish Society who had arrived in 1861 (335) and possessed, like all German missionaries, some medical knowledge. The work at the two dispensaries previously established was con-

(343) Dto. for the Year 1862, Hongkong, A Shortrede & Co., 1863.

(344) Dto. for the Year 1863, Hongkong, ibidem, 1864.

tinued; the attendance at Shiu-hing was somewhat less because Dr. Graves had to spend much time at Canton, leaving the work in the hands of an assistant.

The educational work progressed satisfactorily. Three regular pupils were connected with the hospital during the year 1863. One of them established himself in practice at Canton while still attending on prescribing days; Dr. Kerr considered his prospects fair, provided that he would persevere. Besides these three, there were four pupils connected with the Berlin Missionary Society, one of them an old-style practitioner desirous of acquiring some knowledge of western medicine. An interesting point was that

these young men have been endeavouring to supply themselves with surgical instruments and have had a number made by native workmen after the pattern of those used in the hospital. A beginning has thus been made in an important branch of manufacture, and many useful instruments can now be made which have been unknown to the Chinese.

A noteworthy event of the year 1864 was a partial *post mortem* (removing urinary stone) performed by one of the pupils(345). As before, numerous *opium-smokers* applied for relief, but since the results of indiscriminate ambulatory treatment were not at all satisfactory, it was now made a rule to admit only really promising cases, (10 in number during the year).

The out-stations were kept open. The Rev. Krolczyk was absent half of the year when he undertook a tour of preaching and healing. Kerr, who was much impressed by the possibilities of such work, acted in his place at Shek-lung. Dr. Graves was also absent during the latter half of the year but the work was continued by his capable assistant.

A special meeting of the Society under the chairmanship of Mr. O. H. Perry, U.S. Consul, was held at Canton on November 21, 1865(346). Here it was decided to buy the lot known as Fu-tai hong for the sum of \$6,400. This, the present site of the Canton Missionary Hospital, was located by the river a little below that of the old factories; its frontage was 82 ft. and depth 420 ft. It was planned to build here plain edifices in Chinese style.

At the regular meeting of the Society on January 1, 1866, Dr. Kerr referred to his having taken charge of the Kam-li-fau Hospital where he saw out-patients twice weekly. The attendance there in four months and in the main hospital during the year was almost 25,000 (old and new cases). 403 in-patients had been admitted and about 700 operations performed. While the Fat-shan dispensary was closed in 1864(333), 2,400 more patients had been seen during trips

(345) Dto. for the Year 1864, Hongkong, *ibidem*, 1865.

(346) Dto. for the Year 1865, Hongkong, *ibidem*, 1866.

into the country. The annual subscriptions, which just covered expenses were \$1,411; almost half of this sum (\$628) was contributed by Chinese donors. The 1865 report (40 pages) was published in Chinese.

Dr. Hobson, with whom Kerr had been in correspondence, authorised the latter to bring out a new edition of his series of medical works.

Eight pupils were under instruction throughout the year. Four of these were supported by the Berlin Missionary Society while four belonged to the hospital proper. Among the latter, So To-meng, born at Ko-yu, Kwangtung Province in the year 1847 and joining in 1865, deserves special mention. He soon became an expert ocular surgeon as well as anaesthetist (chloroforming over 10,000 patients without a single death) and continued to work as regular assistant until 1886. For several years more he attended on dispensary and operating days and remained, until his death in 1919, a devoted supporter of the hospital. Dr. So To-meng travelled extensively and completed his education in America (347).

Dr. Graves reported the opening of a second dispensary at *Wu Chau* (Wuchow 梧州) in Kwangsi Province. The work there was mainly in the hands of his assistant who had been with him since the opening of the Shiu-hing station and possessed the full confidence of the patients, as shown by honorary tablets presented to him.

The account of Krolczyk was very picturesque. Aside from his regular work, not only at Shek-lung but also at *Fu-mun* in the Tung-kun (東莞) District, he travelled much. At Hongkong, where he could not find a room large enough to treat his patients, he was not permitted to prescribe out of doors. In Chinese cities, he and his medicine chest were always welcomed and he spent several months at Fuk-wing and Nam-tau (San-on 新安 District) especially. Minor ailments naturally formed the majority of his cases and numerous small operations were performed. During his absence from Shek-lung and Fu-mun, his Chinese assistants continued the work in a skilful manner. The former dispensary was then taken over by the Rev. Ernst Faber, D.D. (348).

Among the stations already existing before the second war, mention may first be made of *Amoy*. As we have seen in the preceding

(347) Dto. for the Year 1919.

(348) Dr. Faber (1839-1899), "probably the profoundest Chinese scholar of the century" (A Century of Protest, Missions, p. 498), after having received an excellent training in theology and natural sciences at German and Swiss schools, sailed as a missionary of the Rhenish Society in 1864 and arrived in China (Hongkong) on April 25, 1865 (ibidem, p. 494).

chapter, the work there was much handicapped by frequent changes in the medical *personnel* and finally came to a standstill in the year 1858. Dr. John Carnegie, sent out by the English Presbyterians, took over the hospital in 1859 but after about a year, severed his connection with the mission to join a local firm of medical practitioners. There being no new medical missionary available he agreed, however, to carry on the hospital work(349). It appears that the establishment was transferred in 1865 to a better-suited Chinese building(350). Dr. Carnegie left in the same year for England where he practised at Chesterfield until his death in 1884. Having displayed there the same benevolent spirit as at Amoy he "was carried to his grave mourned by a whole city" (Thomson, 349). His voluntary services at Amoy were continued from 1865 onwards by his partners and successors under missionary auspices, with funds contributed by the merchants and other foreigners residing in the port.

As can be gathered from Dr. Macgowan's report on his activities at *Ningpo* during the years 1856 and 1857 (339), the building, hitherto used as dispensary and to a limited extent as a hospital, was required by the owners. On account of the events at Canton it was not considered wise to obtain a new one. Therefore, Dr. Macgowan restricted his activities to prescribing for patients at his residence, at the mission chapel and also in private houses when sent for. He noted with satisfaction the intention of the Chinese Evangelization Society to start hospital work as he himself proposed to leave China. Macgowan actually went to England in 1859 and three years later (1862) to America. He returned after some time to China where he engaged in private practice at Shanghai(335).

Dr. Wm. Parker, whose early activity has been noted in the foregoing chapter, returned to Ningpo in 1862 and reopened his hospital under the United Presbyterian Church of Scotland Mission(351). One year later, he died, having been thrown from his horse into the river. His younger brother, John, came out immediately after this sad event (1863) and, while engaged in private practice, looked after the hospital. He formally joined the Scottish Mission in 1865 but went home after two more years' service (1867-335).

In addition to Dr. McCartee's services (see below), a new dispensary was opened in the autumn of 1864 by the Rev. W. R. Fuller of the English Methodist Free Church Mission who—though not a graduate—possessed considerable medical training. Persistent illness compelled his withdrawal to Chefoo in 1868 (352).

(349) J. Macgowan, *Chin. Recorder*, Vol. VII, p. 111; Thomson, *China Med. Miss. Jl.*, 1887, p. 45.

(350) *A Century of Protestant Missions*, p. 376.

(351) *Ibidem*, p. 206.

(352) *Ibidem*, p. 129.

In 1865, the Rev. S. P. Barchet of the American Baptist Missionary Union arrived at Ningpo where he eventually opened a *Homeopathic Dispensary and Opium refuge*(353).

We have seen how the early pioneers at Ningpo bestowed considerable energy upon the cure of opium addicts. A new attempt of this kind, which started in 1859, had a most remarkable origin: An official who had been a government inspector of opium manufacture in India, felt the guilt of his share in the traffic so keenly(354) that he resigned and offered all the savings he had made during his tenure of office (over £3,000) to the Church Missionary Society for curing opium-smokers and combating the evil in other ways. The first instalment of this benefaction reached Ningpo in 1859. Since no medical man was in a position to undertake the work, a school-house of the Church Missionary Society was set apart as a temporary hospice, and the Rev. F. F. Gough took charge of about 150 addicts who, within a few months, applied for relief. He received some assistance from Dr. McCartee and specially from the Rev. J. Hudson Taylor who had come to Ningpo after a short stay in Swatow in 1856(335). The Rev. Gough had to go on furlough in 1860 through having over-worked. Thus the asylum was soon closed; the results had not been very satisfactory.

After about the year 1884 the anonymous benefactor had presented the greater portion of his donation, another attempt to establish a kind of asylum was made by the Rev. (afterwards Bishop) Wm. A. Russell of the Church Missionary Society (?1869). Several cures were effected but the lack of a suitable building soon frustrated all efforts(355).

We have already brought the history of the *Shanghai Chinese Hospital* up to the spring of 1859 when Dr. Hobson's great work in China came to an end. The superintendence of the institution was then undertaken by the Rev. Wm. H. Collins, M.R.C.S., of the Church Missionary Society who had arrived early in 1858. The details of the work were in the capable hands of Chun-fu(356).

After this *interregnum* which lasted exactly one year, Dr. James Henderson of the London Missionary Society took charge of the hospital in April, 1860. In the year following, the site and plant outside the North Gate were sold and a new building erected on Shantung Road. Thus the "Chinese Hospital" founded by Lockhart in 1844

(353) Chin. Recorder, Vol. XVI, p. 238; Thomson, Ch. Med. Miss. Jl., 1887, p. 45.

(354) Latourette, l.c., p. 458.

(355) G. E. Moule, Chin. Recorder, Vol. V, p. 256; A Century of Protestant Missions, pp. 23, 27.

(356) Lockhart, l.c., p. 281; Scarborough, Chin. Recorder, Vol. V. p. 137; Thomson, China Med. Miss. Jl., 1887, p. 45.

from then onwards became known as the *Shantung Road Hospital* (357).

Henderson's career, short as it unfortunately was, is most remarkable. In 1861, he not only performed a number of *autopsies* at the hospital but gave to Chinese practitioners a series of demonstrations of surgical operations performed upon the dead body (358). The next year (1862) we find him on short leave in England, the work presumably being carried on by Chun-fu with the occasional aid of foreign practitioners.

Resuming his duties after a few months, Henderson engaged in a profound study of Chinese medical literature, the fruits of which he embodied in a paper "The Medicine and Medical Practice of the Chinese," read before the North China Branch of the Royal Asiatic Society in 1864; for this research he was awarded the Fellowship of the Royal College of Surgeons, Edinburgh (359). Balme, dealing with this important paper says that

commencing with the beginnings of medical knowledge in all parts of the world, Henderson showed convincingly at what point China had missed the stream of progress, and gave a graphic description of anatomy and physiology as interpreted in Chinese medical literature. His article also included an extensive list of Chinese medical works, commencing with the earliest treatises, ascribed to the teachings of Shen-Nung and Hwang-Ti many centuries before Christ, and concluding with the famous *Yi Chung Chin Chien* (醫宗金鑑), published in ninety volumes in the year 1740.

Unfortunately Dr. Henderson's health began to fail in 1865. To recuperate, he went to Japan where he died in the same year (360). His place was taken by Dr. James Gentle of the London Missionary Society who was able to carry on for a few months only, dying soon afterwards of consumption (Penang, April, 1866—Scarborough and Thomson, 356). Gentle's successor was a private practitioner, Dr. James Johnston, to whose activities we will return in the following chapter.

Early in the 'sixties a new hospital was founded in Shanghai which was named in honour of the missionary pioneer Gützlaff. This will also be dealt with later on.

About the year 1863 a dispensary, supported by the American Protestant Episcopal Mission, was kept by Dr. H. W. Boone (361). He was born in Java, where his father, the first missionary Bishop William Jones Boone, had been engaged in missionary work for some time before the conclusion of the Nanking treaty. Graduating from the

(357) Hawks Pott, l.c., p. 91.

(358) 1862 Report, quoted by Balme, l.c., p. 156.

(359) Balme, l.c., p. 161.

(360) Chinese Recorder, Vol. VIII, p. 302.

(361) Ibidem, p. 311.

College of Physicians and Surgeons in New York, he reached China about the year 1861(362). Owing to ill health he left China about 1865 and was engaged for a number of years in private practice at San Francisco.

Another dispensary of the American Episcopalians was established about the same time by the Rev. E. W. Syle near the West Gate. It was under a Chinese physician with some experience in western medicine and was largely supported by small fees obtained from patients(361).

On a previous page, short reference has been made to the medical work resumed after the war by the Catholic priests at *Tong-kia-tou*. Details in regard to it are contained in a letter written on July 15, 1864, by Brother Bernard wherein he says:—

I have to tell you about a work already known to you that we, or better, St. Joseph has founded at Tong-kia-tou for out-patients . . . On June 29 . . . we opened our dispensary. Five Chinese physicians have offered their services to assist me in this work of charity. Father Nicolaus Massa, acting priest at Tong-kia-tou, has placed posters on the outside wall to make this work known to the public . . . I, myself, have already paid 160 visits and I do not know exactly how many the Chinese doctors have made.

Brother Bernard worked not only at this station but took an active interest in the dispensaries founded by Father Seckinger about 1866 in the towns of Yangchow, Chinkiang, Tanyang as well. Unfortunately, the Brother died in 1867, having attended during his life more than 100,000 patients(275).

Though health conditions at Shanghai were not good for the foreigners, hospital provision for them came comparatively late. As Hawks Pott says(363), the main reason for this was that in the early days the revenues of the Municipal Council (International Settlement) were not sufficient to allow of much expenditure on public institutions—enterprises of this kind being left to private initiative. In 1862 two hospitals for foreigners existed at Shanghai, namely, the *Shanghai Hospital and Dispensary* and the *Marine Hospital*; the former was for some time under Dr. H. W. Boone. The accommodation becoming insufficient, shares were sold for the establishment of a new hospital, some French priests, among them Father Lemaitre (died 1863) taking a prominent part in the organisation. A big building, situated on the French Bund, at the corner of Rue Colbert(275), was rented from the banker Yang Taki. The establishment was opened on January 1, 1864, the nursing service, organised by Hélène de Jaurias, being placed in the hands of the French Sisters of St. Vincent de Paul

(362) See Obituary, *China Med. Jl.*, 1925, p. 971.—The information regarding the first period of Boone's activity in China is both scanty and contradictory as to dates.

(363) *L.c.*, p. 74.

(Filles de la Charité). It was first known under the name of the *French Hospital*, its present designation of the *General Hospital* coming into common use only when it was removed in 1877 to its present site north of the Soochow Creek. The Filles de la Charité continued to minister to the patients until 1913, when their place was taken by the Franciscaines Missionnaires de Marie(364).

Lack of revenue, which prevented the establishment of municipal hospitals, was presumably also responsible for the absence of systematic *public health work*. It may be noted, however, that certain death and burial records were kept as far back as 1850(365) and that a so-called *Nuisance Department* was started in the late 'fifties under a Sanitary Inspector. Its main functions appear to have been scavenging and refuse disposal(366).

We have seen how the regular medical work at *Foochow* came to a standstill with Dr. Welton's departure in 1856, but it was temporarily revived by Dr. Collins who arrived in 1861(367). He, in turn, must have left not later than 1863 and then started work in Peking (see below).

Turning to the medical undertakings of the newly-opened treaty ports, we must—in order to proceed chronologically—begin with *Swatow* (汕頭). Soon after his arrival there in 1856, the Rev. Wm. C. Burns (1815-1868) of the English Presbyterian Mission tried to procure funds for medical work. J. Hudson Taylor was associated with him for a short period(368) but soon left for Ningpo. However, the services of Dr. De La Porte, in practice among the foreign community at Double Island, were secured. A room in a Chinese building in the city was rented where Dr. De La Porte saw patients twice weekly until he left, 18 months later, for England. The medical activities of the mission became permanent in 1863 with the arrival of Dr. William Gauld who rented a Chinese house and equipped it as a hospital. Gauld's distinguished career will be dealt with in due course.

The most notable event by far to be recalled in the present connection is the resumption of western medical practice at *Peking* by Dr. Lockhard, now an F.R.C.S. (1857-335). We have said earlier in this chapter how this great pioneer was compelled to leave China for a time, thus concluding his work at Shanghai. During his absence in England, he prepared a book called "The Medical Missionary in

(364) Jamieson, Customs Med. Report No. 15 (1877-78), p. 4; Encyclopaedia Sinica, pp. 179, 195, 258.

(365) Jordan, China Med. Jl., 1929, p. 339.

(366) Personal information from Dr. Jordan (letter dated February 7, 1930).

(367) A Century of Protestant Missions, p. 32.

(368) Ibidem, p. 179.

China—a Narrative of Twenty Years' Experience" which appeared in 1861, the year of his return to China(369). This compilation contains, besides a description of certain Chinese customs, institutions, etc., an exposition of the early foreign medical work in China, especially that of the missionaries. And, since Lockhart was bent upon doing fullest justice to the activities of his colleagues from whose reports he quoted as copiously as from his own, his book forms one of the most valuable sources of information on the history of medicine in China during the first six decades of the 19th century. When published, it served without question as an inspiration and, at the same time, as an excellent guide to those about to start in the field. It is interesting to note in this connection that Lockhart, like the anonymous *Non Anglicanus* many years before him (see conclusion of Chapter IV), was against too close a combination of medical and ministerial duties, insisting that the medical missionaries should be strictly laymen. He says in his preface that

admitting most fully . . . the great good that all missionaries may do by the exercise of common sense in the use of a medicine chest, when no better aid is available, yet if the medical missionary is ordained, either a good surgeon or a good pastor is spoiled. I have seen this in Protestant and in Romish missions; a man attempts to follow two professions, and always fails signally in one, sometimes in both, and thus loses rather than gains influence and power for good.

Information on the beginning of Lockhart's work in Peking is not wanting(370). Arriving in the capital as Senior Physician to the British Legation on September 13, 1861, he was at first afforded hospitality by Mr. Bruce, H.B.M. Minister, but soon (October 23) he managed to settle down in premises adjacent to, and rented from, the British Legation. Lockhart writes in the "Report of the London Missionary Society's Chinese Hospital at Peking from October 1, 1861 to December 31, 1862":—

A few patients came to me while I was living in the Legation but as soon as I went into my house and it became known that I would attend to any sick Chinese that applied to me, patients began to come in numbers for relief.....

In fact the total by the end of the year 1862 was 22,144. The report goes on to say that

persons of all classes, officers of every rank and degree, came and sent their wives, mothers, children and other relatives. Merchants and shop-keepers, working-people and villagers, together with numerous beggars, assembled at the hospital. Ladies and respectable women also were present in large numbers, and it was surprising to see the readiness with which they both

(369) London, Hurst & Blackett. This is the second edition. We found nowhere any mention of the first one. It may be added that Lockhart had before published two papers on Chinese medicine: (i) Treatise on Chinese Midwifery. Dublin JI. of Medical Science, 1842; (ii) Description of Chinese Anatomical Plates, Chinese Repository, Vol. IX, p. 194.

(370) See specially Brayton Barff, l.c.; Cormack, China Med. JI., 1926, p. 517.

came for relief and brought their children who were suffering from various diseases. The Tartar women came very readily indeed. It is probably the Tartar element amongst the people here that makes them more free with foreigners than are the Chinese at other places.....

The total income of the hospital was Tls. 1,883, the expenditure Tls. 2,007.65, so that there remained a deficit.

Lockhart's report notes the presence of, in the summer of 1862, a severe *Cholera* epidemic at Peking, saying that people were often seized in the streets and died, unable to reach their homes. All his hospital assistants were attacked but fortunately, none of them died.

This invasion of the capital, though not the first, was presumably the severest on record. Dudgeon, in a report on the health of Peking (371), said in regard to it:—

It lasted about two months, and is supposed to have carried off about 15,000 persons, or, estimating the population at a million and a half (probably a rather large estimate), about 1 per cent. It was first heard of at Taku, then at Tientsin, where it was very virulent and exceedingly fatal. It followed the course of the river, attacking the various towns on the banks, and lastly reached the capital. The disease broke out first in the southern city, but soon spread to the northern. When it had entirely left the latter city, many fatal cases still occurred in the former, and principally near the gates leading to the Tartar city.

Dudgeon then enters into a discussion of the history of cholera in China. He maintains that

Cholera had been known in China, as in India, from time immemorial. It was described 2,500 B.C. by the very name which it now bears, viz. *hwo-luan* (霍亂), an expression meaning something huddled up in a confused manner inside the body and which is evidenced by the vomiting and purging.

He enumerates several ancient Chinese writers describing the ailment with all its classical symptoms but adds that

no mention is made by any of the numerous authors I have consulted as to its epidemic character, which has characterised the visitations of this affection in India, and latterly in Europe since 1817.

This belief in the antiquity of cholera expressed by Dudgeon, while shared by modern authors (372), was for a time debated. Among those believing that the disease did not invade China before the nineteenth century, we may first mention a Chinese practitioner called Su-tzemi (Hsü Tzu-mo) who, like the Anatomist Wang Ch'ing-jen, is entitled to a place in the modern medical history of China (373).

(371) Customs Med. Rep. No. 4 (1872), p. 39.

(372) See e.g. Maxwell, *China Med. J.*, 1927, p. 595.

(373) For information on Su-tzemi consult:—Macgowan, Report of the Ningpo Hospital for 1851, Canton 1852 & Chin. Repos., Vol. XX, also Lockhart, l.c., p. 229; Macgowan, Customs Med. Rep. No. 22 (1881), p. 27 & No. 27 (1883-84), p. 9.

When cholera appeared at Kashing on the borders of Chekiang and Kiangsu in 1821, the practitioners considered it to be the "Sudden vomiting and purging disease" or *hwo-luan* (霍亂) and due to "accumulated heat" which destroyed the equilibrium between the dual powers of the system. Consequently they gave cooling remedies to their unfortunate patients. As can be gathered from a small monograph written by Su-tzemi, he clearly recognised that he was dealing with a hitherto unknown disease to which the new name of "Contracting the leg tendons disease" (吊脚痧) was given. He regarded it as arising from "morbific cold" and employed, very reasonably, remedies for warming or stimulating the vessels. Thus, as Macgowan admits, Su-tzemi and his followers during subsequent cholera outbreaks

despite their fanciful theories . . . pursued the same therapeutic course, which in the West has been found most efficacious.

Su-tzemi's opinion that sometimes no distinction was made between true cholera and acute gastro-enteritis, was endorsed by western-trained observers. An interesting contribution to this problem was made in 1843 by a layman, the Rev. W. C. Milne(374) who in the autumn of 1842, made enquiries upon the subject at Tanghai and Ningpo. He found that the *hwo-luan tu sie* (霍亂吐瀉)—term for sudden and violent vomiting and purging, also intended to express violent throes in retching) and the *au sie koh lwan chih tsi* (a sudden and violent attack of vomiting and purging) referred to "English Cholera." The different names for true cholera, which was regarded by the Chinese with horror as an incurable disease, all indicated the presence of muscular cramps.

Dr. Wong Fun, who in 1873 made inquiries as to the frequency of Asiatic cholera at Canton(375), found the disease rare and added that

the term *koh-lwan* (霍亂) commonly used to signify cholera, seems to answer more to the English than to the Asiatic form of the disease. It is a general term, including colic, English, and sometimes Asiatic cholera. When the disease takes on the epidemic form, it goes by the name *wan yih* (瘟疫), and not *koh-lwan*, though *wan-yih* properly means pestilence. Even to a Chinese physician the term *koh-lwan* suggests none of the dreadful ideas usually associated with epidemic cholera in the mind of an European, which seems to show that *koh-lwan* does not mean epidemic cholera(376).

(374) Chin. Repos., Vol. XII, p. 485.

(375) Customs Med. Rep. No. 6 (1873), p. 49.

(376) It must be mentioned, however, that Hobson in his 1848-49 report, referring to several cholera deaths, said that "the malady is called in the dialect *Chow-kan-ching*, a 'drawing up of the tendons'" (quoted by Lockhart, l.c., p. 181).

According to Dr. David Manson(377), there is no evidence to show that the various epidemics before the nineteenth century enumerated in the Fukien annals, were of cholera. Thus, the first known instance which may definitely be pronounced as being true in nature, occurred in August and September, 1821 (7th and 8th Moon of the 1st year of Taokwang) when, as the annals say

an epidemic spread over the whole province of Fukien, vomiting and purging came on very suddenly and countless numbers died, being men in the morning and spirits at night.

Macgowan in his 1881 Wenchow report(373) also considers cholera as a new disease. He points out that the information on early manifestations in the country as given by Simmons(378) is extremely meagre. A disease

styled "dry cholera" is common in hot weather, and is called *sha* (痧) a term that includes colic, sunstroke, heat apoplexy and various disorders that make their attack suddenly. At Canton it is more frequent than elsewhere; the Cantonese affirm that *sha* has prevailed among them from time immemorial, which may explain their belief that they always had Asiatic cholera among them.

Macgowan doubts this and is also sceptical that the old books refer to true cholera.

It is interesting to note, however, that in his 1883-84 report(373) he admits

that the Chinese systematic works describe one form of cholera as characterised by all the symptoms that impart to epidemic cholera an extraordinary degree of terror, including contractions

and adds that the old savants (like Su-tzemi later on) recommended warming remedies against this type.

It can thus be seen that the question as to whether cholera manifested itself early in China or not is a somewhat involved one. Yet, notwithstanding the scanty epidemiological information, we think that one ought not to be too sceptical. It seems characteristic of this disease that quiet periods follow virulent outbreaks so that—when the latter reappear—the impression of an hitherto unheard-of evil is created. This was notably the case with the great Indian epidemic of 1817-23 which spread in due course to China(379).

(377) Customs Medical Reports No. 14 (1877), p. 33.

(378) Simmons (Customs Med. Rep. No. 18 (1879), p. 1 & foll.) states that

(a) according to Cleyer (Cholera Epidemic of 1873 in the United States) cholera appeared in China in 1669, probably having been brought from Malacca. (This statement as to the existence of cholera in China in the 17th century is endorsed by Rogers, Bowel Diseases in the Tropics, 1921, p. 2);

(b) Gentil, in his *Voyage aux Indes Orientales* alludes to cholera being in the Coromandel in 1761 and 1769, and states that shortly after the latter date it was present in China.

(379) Rogers, l.c., p. 1 & foll.

It is easy to understand why such an impression was created in China. Whether cholera in this country is now endemic or not, there is no doubt that the early outbreaks were always imported. And how, under these circumstances, cholera epidemics must have been few and far between in China, is aptly explained by Simmons (378) who points

to the utter insignificance of the flow of life eastward from India, as compared with the enormous migrations, commercial, religious, and military, which for centuries streamed in the contrary direction from the country where Asiatic cholera is born.

He also maintained that (a) the Chinese habit of drinking boiled water or tea only wherever possible, (b) the absence of rites of drinking from, or bathing in, rivers and lakes connected with pilgrimages, as well as (c) the method of disposing of nightsoil in China, all tended to keep any imported infection in check or, at least, to localise it.

For these reasons, we are inclined to think that manifestations of cholera in China before the nineteenth century, though unquestionably rare, were not totally absent(380).

As will be gathered from the chronological table appended to this book, cholera, which had probably reached the confines of China by the land route in the year 1817, actually invaded the country by the sea-route in 1820. Evidently this spread was the outcome of the military operations of the British in Burma(378). The infection was widespread in 1821 when Peking and Shantung province suffered(377). A second wave from India reached China in 1826, a third in 1840 when the seeds of the disease seem to have been brought to the country by the combined European and native army dispatched by the British from India(378); Peking was both times involved. For the further history of the disease, the aforementioned table must be referred to.

Taking up our narrative, we must return to the year 1862 when the charitable work of the Catholic Sisters of Mercy was started at Peking with the opening of the *Jentseutang* (仁壽堂). This was an orphanage and dispensary (for women and children mainly) with wards for incurable children. The capacity of it soon reached 500 beds(381).

In the year 1863, the medical missionaries John A. Stewart (of the Society for the Propagation of the Gospel) and Wm. H. Collins

(380) For further information on this subject see Wu Lien-teh & Sung Chih-ai, Nat. Quar. Service Rep., Series IV, 1933, p. 1 and Wu Lien-teh, "Cholera" (Shanghai, 1934), p. 7.

(381) Bussière, Nat. Med. J1., 1928, p. 16; Cormack, l.c., p. 522.

arrived at Peking. The former opened a dispensary in the West City but left in 1864 to take up private practice at Foochow. His place was taken by Dr. Collins who seems to have continued the work—probably with some interruptions(382)—until 1880 when he returned to England (383).

Dr. Lockhart continued in the Peking Missionary Hospital until spring 1864, being relieved by Dr. John Dudgeon of the London Missionary Society who had arrived in March of the same year(384). Taking definite leave from China, Dr. Lockhart commenced practising at Blackheath in England where he died on April 29, 1896, long survived by his widow (sister of Sir Harry Parkes) (385).

In 1865, when the Legation wanted the premises for its own needs, Dudgeon's hospital was removed to a Buddhist temple on the Great East Street, now known as Hatamen Street. The new establishment

consisted of five large courts, with large, high, commodious, well ventilated rooms. It opened directly on the great street by a large gateway and in front of the building were two flagstaffs, 70 feet high. Hence the popular name of the place which is known to this day as the *Shwang Chi Kan* or the "Twin Flag Poles" (Cormack, 370).

The entire building, including repairs and painting, cost about Tls. 1,200 and offered accommodation for 80 patients. It formed the nucleus of the present Peking Union Medical College.

The several treaties concluded after the war had provided for the opening of the port of Tengchow (登州府) but because the harbour was not spacious enough, by general consent the nearby Chefoo (芝罘), then little more than a large fishing village, was preferred. However, J. B. Hartwell, one of the two missionaries of the Southern Baptist Convention, arriving at the end of 1860 in Chefoo, went to *Tengchow*. Though not a medical man, he did his best for the wounded when the city was assaulted in the autumn of 1864 by a horde of robbers, called *Nien-fei* (捻匪). His services were so much appreciated that, for the next ten years (when no medical missionary was available), the missionaries were obliged to prescribe for all kinds of diseases(386). A specially noteworthy

(382) Thus it is mentioned that he went in 1869 to Yung-ching (永清), some fifty miles from Peking, to start missionary work there (A Century of Prot. Miss., p. 63).

(383) Ch. Med. Miss. JI., 1887, p. 113; Thomson, *ibidem*, p. 45.

(384) Chin. Recorder, Vol. VIII, p. 208.

(385) A Century of Prot. Missions, p. 661; Brayton Barff, l.c.

(386) A Century of Protestant Missions, p. 323.

part in this work was taken by the Rev. C. W. Mateer, the founder of the Shantung College(387).

The pioneer medical worker at Chefoo was Dr. D. B. McCartee who came from Ningpo in 1862 but returned after three years(1865) to his old place(388). As mentioned already, the Rev. Fuller went to Chefoo in 1868 where he hoped to establish a mission. The church at home not seeing its way to support this new work, he resigned and started medical practice on his own account, chiefly among the Chinese. He continued in this until his death in 1894(352).

Dr. James Gentle of the London Missionary Society was instrumental in introducing western medical practice into Szechwan province when, in 1864, he arrived at the treaty port of *Chinkiang* (鎮江) on the Yang-tse River. No houses being available, the foreigners had to live in junks moored to the banks. Gentle started a dispensary for the Chinese in his boat. This was continued for about a year only, when he left for Shanghai. Gentle's short activity at Chinkiang is, however, of special note as he was the first among the medical missionaries who departed from the principle of gratuitous medical aid by charging his patients a small fee towards the support of his dispensary(389).

A dispensary at Hankow (漢口) was opened in 1864 by Dr. Frederick Porter Smith of the Wesleyan Methodist Missionary Society(335). The next year (1865) witnessed the beginning of the great career of Dr. James L. Maxwell, English Presbyterian Mission, in Formosa. Having reached China after a voyage in a sailing vessel lasting nearly six months, he went to Tainan (Taiwanfu-臺南), Formosa in May 1865, together with the Rev. Carstairs Douglas. He settled on the outskirts of the city, acquired premises for dispensary work and started to treat all who came for help. Though the people appreciated his work, the literary classes resented it so much, that after four months, Dr. Maxwell was constrained to remove to the neighbouring treaty port of Takao (Takow—打狗), then but a small settlement where the English merchants resided(390). His subsequent career and that of Dr. Porter Smith will be dealt with in the next chapter.

(387) Chin. Recorder., Vol. VIII, p. 392.

(388) Ibidem, p. 380.

(389) Ch. Recorder, Vol. III, p. 156; Thomson, Ch. Med. Miss. Jl., 1887, p. 45; ibid., 1888, p. 74.

(390) Thomson, Chin. Med. Miss. Jl., 1887, p. 45; A Century of Protestant Missions, p. 189; Maxwell, China Med. Jl., 1925, p. 636.

CHAPTER VII

PERIOD 1866—1879

ADOPTION OF NEW METHODS FOR MEDICAL WORK

Medical school in connection with the Canton Missionary Hospital instituted—Dr. Dudgeon appointed as Professor of Medicine at the Tung Wen College in Peking—Dr. Kerr starts with publication of a series of Chinese medical textbooks—Conference of Protestant Missionaries at Shanghai (1877)—Female students admitted to Canton Medical School—Arrival of first foreign medical women and opening of hospitals for women and children—Establishment of Customs Medical Service—Early activity of Dr. Patrick Manson in China—Customs Medical Reports—Sanitary Regulations for the Port of Shanghai—Progress of municipal health work in the International Settlement of Shanghai—Anti-Foot-Binding Society organised at Amoy—Foundation of Tung Wah Hospital at Hongkong—Progress of hospital work at Canton, Amoy (Dr. Patrick Manson), Ningpo, Shanghai, Foochow, Swatow, Peking, Tengchow and Chefoo—First observation of scarlet fever at Chefoo and discussion of the history of this disease in China—Continuation of work at Chinkiang, Hankow and Formosa—New medical undertakings.

It may be claimed that we have now reached not merely the beginning of a new chapter chosen for convenience's sake, but the onset of a new epoch in the history of western medicine in China. For the achievements dealt with thus far represent, in the main, developments along the lines laid down by the early pioneers of the nineteenth century and, in part, even by the Jesuit Fathers of the eighteenth. We shall see how new ideas gradually arose and led to undertakings greatly differing from those inaugurated before and exerting a profound influence on the further course of events.

Mention must first be made of the great steps taken in the domain of medical education. We have seen the truly heroic endeavours of the early pioneers to teach pupils amidst multifarious other duties and also that some of them, at least, were fully aware of the prime importance of this branch of the work. Gradually the idea of replacing the apprentice system as practised in former centuries in Europe, was introduced in China. Thus an editorial

appearing in the North China Daily News of September, 1863(391) warmly advocated the cause of medical schools and proposed that a start should be made with certain elementary subjects, like the treatment of fevers and skin diseases as well as minor surgery. It continued thus:

Very soon an increasing desire for knowledge on the part of the more educated . . . would demand instructors in other branches besides those essentially medical and surgical. A college would then spring up, and chairs of chemistry, natural history and natural philosophy would soon group themselves around the chairs of anatomy, physiology, medicine and surgery. But both as being more practically useful, and as more likely to attract attention, medicine and surgery should be the first subjects taught. The rest would follow soon. No one will deny that this would be a more decided step towards regenerating China than any attempt that has yet been made to save the country from the depredations of the Rebels.....

We could not be accused of selfish motives in pursuing such a course. The Chinese are well aware that all the operations now so energetically carried on against the Rebels are undertaken for our own protection and for the security of our trade. But no motive save pure philanthropy could be traced under the attempt to introduce foreign scientific knowledge into the country.

However, it was not until 1866 that a medical school was installed in connection with the Canton Missionary Hospital. This epochal event is thus tersely dealt with in the Medical Missionary Society's Report for the year:—

Immediately after the occupation of the new Hospital (October 1st) a course of medical instruction was commenced in which Dr. Kerr is assisted by Dr. F. Wong, who is eminently qualified for this department. The Senior assistant, Dr. Kwan Ato, has been absent in Sz-Chun (Szechwan) (392) at the request of the Governor-General of that Province, but is soon expected to return, when he will give instruction in practical medicine, native and foreign.

In Kerr's hospital report appended to the above, some more details were given. He said that the newly-opened School of Medicine would give systematic instruction to the pupils of the Missionary and Kam-li-fau hospitals as well as to a few others. It was proposed that Dr. Wong Fun should teach Anatomy, Physiology and Surgery, Dr. Kerr, Materia Medica and Chemistry, Dr. Kwan Ato, Practical and Chinese Medicine, while other specialities would be given all possible attention.

In the next report(393) Dr. Kerr noted that "a number of pupils" had been under instruction and some of them had made commendable progress. While highly praising the collaboration of

(391) Balme, China Med. Jl., 1926, p. 702.

(392) It appears that Kwan Ato operated on the Governor-General of Szechwan Province for cataract (see Kerr, China Med. Miss. Jl., 1896, p. 95).

(393) Report of the Med. Miss. Soc. for 1867, Canton, 1868.

Dr. Wong Fun, Kerr deplored the slender facilities for practical anatomical work:

The want of opportunities for dissection has been much felt, and the superstitious regard of the Chinese for the dead would seem to be an insurmountable obstacle to the prosecution of this important branch of study.

An endeavour has been made to prepare the way for this by holding post mortem examinations in cases where patients without friends die in the hospital. Opportunity is taken also to dissect an arm or leg in a hasty way, and thus some of the most important regions of the body have been shown to the pupils.

These examinations and dissections have been held without any effort at secrecy, and so far as I have been able to observe, have produced no unfavourable influence on the minds of patients or others who have been cognizant of the proceedings.

The fact that the Chinese have little or no regard for the corpse of a child has been taken advantage of, and in one instance the body of a child which was given to me was dissected in the hospital yard. I am satisfied that with due caution and without any attempt at secrecy, the public mind may be gradually familiarised with dissection as an essential part of medical education.

In 1868(394) twelve pupils were under instruction, among them several old-style practitioners or sons of such. Two students—connected with the hospital for five or six years—were about to commence private practice. Apparatus for practical work in chemistry had been obtained and taken in use. Dr. Kerr added that the establishment of a

regularly organised medical school in connection with the hospital is only a question of time.

Progress was equally satisfactory in 1869(395) when Anatomy, Physiology, Chemistry, Practical Medicine (Dr. Wong Fun) and *Materia Medica* were taught. The senior pupil. Wu Achung, was about to establish himself in the city of Ko-chau-fu, while two others returned home after completion of the course.

In 1870(396) several new students were received. A few older ones, already engaged in private practice in the city, continued to attend on prescribing days and at operations without expecting any remuneration. Dr. Kerr highly commends the surgical skill of his Chinese assistants who

soon acquire a readiness in the use of the knife, which gives promise of future skill, and of ability to relieve the sufferings of their countrymen without the aid of the foreigner.

From Dr. Kerr's 1871 report(397) it can be gathered that two days (Tuesday and Saturday) were set apart each week for lessons to the medical class. In the next year(398) he expressed satisfaction

(394) Dto. for 1868, Hongkong, De Souza & Co., 1869.

(395) Dto. for 1869, *ibidem*, 1870.

(396) Dto. for 1870, *ibidem*, 1871.

(397) Dto. for 1871, *ibidem*, 1872.

(398) Dto. for 1872, *ibidem*, 1873.

with the progress of the school. There was still a lack of adequate textbooks but nevertheless the students "acquired very respectable skill in the diagnosis and treatment of disease." It is added that more than a dozen young men who had spent three years or more as students in the hospital, were by then in private practice—mostly in country towns but partly in the city. Their initial difficulties were considerable but some began to secure confidence. Kwan Ato had already been for some years in lucrative practice.

The next important allusion to school work is in the report for 1874(399) when Dr. Scott (evidently a private practitioner) is mentioned as giving anatomical lessons by dissecting dogs. One post mortem was performed upon the dead body of a former employee of the French Consul who had suffered from aneurysm of the aorta. The attendance at the school was less than before (7 pupils), but it was gratifying to see that the young men applying for instruction were from the better classes.

Before continuing with the history of Kerr's educational endeavours we must record another important event, namely the appointment of Dr. Dudgeon as Professor of Medicine at the Imperial Tung Wen College (同文館) in Peking. To this establishment, which had been founded in 1863 and was under the general control of the Customs, a scientific department was added in 1865 and four years later (1869), Dr. W. A. P. Martin of the American Presbyterian Mission North, the well-known author and translator, became its head(400).

These greater facilities for education naturally made the question of proper text-books a burning one. As Kerr puts it in 1870(396)

the excellent works prepared by Dr. Hobson have been of inestimable value in introducing a knowledge of Western Medicine and Surgery to the Chinese; and they will long be sought after by Chinese scholars, but the time has arrived when Medical Students need fuller treatises on each branch.

Concentrating his energy upon the compilation and translation of such books, Dr. Kerr published in 1871 the first two volumes of his "Principles of Chemistry" (the third appeared in 1872, the fourth in 1875) as well as a "Manual of Materia Medica"(401). In the next year (1872) followed a thin volume on "Essentials of Bandaging" (revised and reprinted in 1875), in 1873, a short tract entitled "Method for Restoring the Drowning." Further contributions were a "Manual of Skin Diseases" and one of "Symptomatology" (both

(399) Dto. for 1874, Canton, De Souza & Co., 1875.

(400) Balme, l.c., p. 161; Encyclop. Sinica, p. 578; Latourrette, l.c., p. 249.

(401) A second edition of this together with an English-Chinese glossary came out in 1875, a third in 1886.

in 1874) while the last work issued by Kerr during this period was a "Treatise on Syphilis" (1875) (402).

As proved by the speedy necessity for further editions, the success of these books, which were published with the financial support of the Medical Missionary Society, was assured from the first. As soon as the first two volumes of the Chemistry came out, Mr. (afterwards Sir) Robert Hart, Inspector-General of Customs, ordered 100 copies for the Imperial College in Peking, while 50 were bought simultaneously by a Japanese bookseller (397). In 1875 it is noted that the return from the sale of books was satisfactory.

Kerr's books were not the only ones edited during the period now under discussion. In 1874 there appeared a translation of a *Materia Medica* by Kao Chi-liang (高季良) followed in 1879 by an "Outline of Eye Diseases" translated by western-trained Chinese (403). Dr. Dudgeon published in 1875 "Miscellaneous Essays on Western Medicine" and an "Anatomical Atlas" (20 leaves), followed later on by a monumental "Anatomy" (404).

Mention must also be made of the activity of John Fryer who, besides many other works, including chemical ones, translated in 1876 the "Handbook of Medicine" by Rayle and Headland (405).

The whole problem of publications in Chinese was discussed at the Conference of Protestant Missionaries held in Shanghai in 1877. Being the first undertaking of its kind, it was an unexpected success, one hundred and forty-two missionaries from practically all fields then occupied by Protestants being in attendance. A permanent Committee on Schools and Textbooks was elected with Fryer as General Editor. While this apparently did not exert any direct influence upon the medical undertakings, there is no doubt that the deliberations of the conference, embracing such subjects as the attitude against the opium-evil and foot-binding, besides medical work in the strict sense, proved stimulating (406).

Returning to the subject of medical education proper, due notice must be taken of the next great step forward—the *admission of female students* to the Canton medical school. This event took

(402) In addition to the Reports see Chalmers, Chinese Recorder, Vol. VII, pp. 174-201 & Thomson, China Med. Miss. Jl., 1887, p. 115; Cadbury and Jones, l.c., pp. 177, 280. There are some slight discrepancies as to when the early books appeared. We trust that the dates preferred above are fairly reliable.

(403) Information supplied by Dr. C. S. Lin.

(404) Chinese Recorder, Vol. VIII, p. 208.

(405) Thomson, China Med. Miss. Jl., 1887, p. 115.

(406) A Century of Prot. Missions, p. 582; Latourette, l.c., p. 413.

place in 1879(407), five years after the London School of Medicine for Women had been opened, and three years after Switzerland had taken the lead on the continent. In the United States a Woman's Medical College had been organised as early as 1850(408). It was but natural that the *first medical women* sent by the missions to China hailed from that country. Details in regard to their arrival and the *first hospitals for women and children* instituted by them will be given when we deal with the individual stations.

Equal in importance to the growth of educational work was the development of the Customs Medical Service under Mr. (afterwards Sir) Robert Hart, Inspector-General of the Chinese Maritime Customs since 1863(409). Under him, Customs Medical Officers were appointed in the various ports. The earliest list of them in our possession(410) is as follows:—

Peking	Dr. J. Dudgeon	Foochow	Dr. J. M. Beaumont
Newchwang	Dr. J. Watson	Dto. Pagoda	Drs Somerville and Sherwin
Tientsin	Dr. J. Frazer	Anchorage	
Chefoo	Drs. Carmichael and Myers	Amoy	Drs. Jones & Mueller
Hankow	Dr. A. G. Reid	Tamsui	Dr. L. H. Franklyn
Kiukiang	Dr. G. Shearer	Takow	Dr. P. Manson
Chinkiang	— (411)	Swatow	Dr. C. M. Scott
Shanghai	Drs. Barton and Galle	Canton	Dr. F. Wong
Ningpo	Dr. R. Meadows	Whampoa	Dr. R. Shillitoe.

From the above, it is seen that 17 Customs Medical Officers were appointed, of whom one was Chinese. Since that time, both Chinese and foreign Medical Officers have joined the Customs until in 1931 there are on the list kindly supplied by Inspector-General Sir F. W. Maze, 77, of whom 44 are Chinese.

Dr. Wong Fun continued to work for the Customs as well as for the Medical School and saw numerous private patients until 1878 when he died (October 12) a bachelor, leaving a big fortune. As shown by a report of his successor, Dr. Flemming Carrow, his death was due to a carbuncle on the back of the neck(412).

Among the foreign Medical Officers enumerated above were some who had already served with distinction in China, like Drs.

(407) Kerr, China Med. Miss. Jl., 1896, p. 95.

(408) Garrison, l.c., p. 769.

(409) The inception of the Customs Service goes back to the year 1854 when (the rebels holding Shanghai) foreign inspectors were delegated to the Customs office in this city. It is interesting to note that Capt. Carr, the U.S. representative was replaced by Dr. Fish whose earlier medical career was described in Chapter V (See Macnair, l.c., Ch. X, espec. p. 394).

(410) Inspector General's Circular No. 19 of 1870.

(411) This post was held for a short time by Dr. Gentle (Ch. Med. Miss. Jl., 1891, p. 251).

(412) Customs Med. Rep. No. 18 (1879), p. 57.

Dudgeon and J. R. Carmichael; they were joined later on (1879) by D. J. Macgowan whose first report on the health of Wenchow appeared in 1881.

Among the newcomers appointed by Hart, mainly from graduates of Scottish medical schools, we find the illustrious name of Dr. (afterwards Sir) Patrick Manson, whose early career may conveniently be dealt with now. Born on October 3, 1844, in the parish of Oldmeldrum, in Aberdeenshire, he graduated M.B., C.M., of Aberdeen University in October, 1865, shortly after reaching the statutory age of 21 years. Soon afterwards he was appointed Assistant Medical Officer to the Durham Lunatic Asylum. During the seven months he held this post, he appears to have availed himself freely of facilities for post mortem examinations as shown by his first paper "A Peculiar Affection of the Internal Carotid Artery in Connexion with Diseases of the Brain." This was offered as a thesis for the Aberdeen M.D. degree, which he duly received in July, 1866.

Before that time Manson, through the interest of his elder brother, then in Shanghai, obtained the appointment of Customs Medical Officer for Takow, Formosa, where he arrived in June, 1866. Besides his official duties, which presumably did not take much of his time, he daily attended the missionary hospital, keeping careful notes of his observations. He also conducted private practice among Europeans and Chinese, becoming so prosperous that at the end of his third year he was able to repay his father the whole cost of his medical education—£700.

Manson's stay in Formosa came to a somewhat abrupt end: The island had long been in a state of unrest, and as he happened to be on friendly terms with some native contractors abetting one of the factions, he was advised by the British Consul to leave. Thus, early in 1871, he set sail for Amoy (413).

The official duties of the Customs Medical Officers (many of whom also attended voluntarily poor Chinese patients) consisted, besides taking medical care of the staff, of inspection of ships calling at their port and taking adequate steps in the case of illness on board, especially if no ship surgeon was available. Sometimes, as in the case of Manson, other tasks, like the keeping of meteorological records, were assigned to them. That they soon engaged in activities far above the plane of this routine work was due to a happy combination which brought together a most able physician, Dr.

(413) Manson-Bahr & Alcock. *The Life and Work of Sir Patrick Manson* (1927), Chapter I.

Jamieson, whose trained mind discerned the great possibilities of the Service, and the farseeing administrator Robert Hart, who at once perceived the greatness of Jamieson's scheme and energetically acted upon it. The result of their team-work is embodied in a circular of the Inspector-General, issued on December 31, 1870. This historic document is herewith reproduced:

INSPECTOR GENERAL'S CIRCULAR NO. 19 OF 1870

Inspectorate General of Customs,
Peking, 31st December, 1870.

Sir.

1. It has been suggested to me that it would be well to take advantage of the circumstances in which the Customs Establishment is placed, to procure information with regard to disease amongst foreigners and natives in China; and I have, in consequence, come to the resolution of publishing half-yearly in collected form all that may be obtainable. If carried out to the extent hoped for, the scheme may prove highly useful to the medical profession both in China and at home, and to the public generally. I therefore look with confidence to the co-operation of the Customs Medical officer at your port, and rely on his assisting me in this matter by framing a half-yearly report containing the result of his observations at . . . upon the local peculiarities of disease, and upon diseases rarely or never encountered out of China. The facts brought forward and the opinions expressed will be arranged and published either with or without the name of the physician responsible for them, just as he may desire.
2. The suggestions of the Customs Medical Officers at the various ports as to the points which it would be well to have especially elucidated, will be of great value in the framing of a form which will save trouble to those members of the Medical profession, whether connected with the Customs or not, who will join in carrying out the plan proposed. Meanwhile I would particularly invite attention to—
 - a. The general health of . . . during the period reported on; the death rate amongst foreigners; and, as far as possible, a classification of the causes of death.
 - b. Diseases prevalent at . . .
 - c. General type of disease; peculiarities and complications encountered; special treatment demanded.
 - d. Relation of diseases to

{	Season.
{	Alteration in local conditions—such as drainage, etc.
{	Alteration in climatic conditions.
 - e. Peculiar diseases; especially leprosy.
 - f. Epidemics

{	Absence or presence.
{	Causes.
{	Course and treatment.
{	Fatality.

Other points, of a general or special kind, will naturally suggest themselves to medical men; what I have above called attention to will serve to fix the general scope of the undertaking. I have committed to Dr. R. Alex.

Jamieson of Shanghai, the charge of arranging the Reports for publication (414).

3. Considering the number of places at which the Customs Inspectorate has established offices, the thousands of miles north and south and east and west over which these offices are scattered, the varieties of climate, and the peculiar conditions to which, under such different circumstances, life and health are subjected, I believe the Inspectorate, aided by its Medical Officers, can do good service in the general interest in the direction indicated; and, as already stated, I rely with confidence on the support and assistance of the Medical Officer at each port in the furtherance and perfecting of this scheme. You will hand a copy of this Circular to Dr. . . . and request him, in my name, to hand to you in future, for transmission to myself, half-yearly Reports of the kind required, for the half-years ending 31st March and 31st October—that is, for the winter and summer seasons.

I am, &c.,
(Signed) ROBERT HART, I.G.

The Commissioners of Customs:

Newchwang	Ningpo
Tientsin	Foochow
Chefoo	Tamsul
Hankow	Takow
Kiukiang	Amoy
Chinkiang	Swatow and
Shanghai	Canton.

Dr. Jamieson served for more than twenty years as Editor of the Customs Medical Reports, the first issue of which appeared on August 1, 1871(415). Until March, 1904, they continued to come out in much the same form; then a final issue in pamphlet form, embracing Issues 68-80 (1904-11) was published in 1911(416).

The importance of the early volumes of the Customs Medical Reports can hardly be exaggerated. As we have seen, some of the physicians in charge of missionary hospitals were able to embody valuable nosological and historical information in their reports; in general, however, these had to be written to attract lay subscribers at home rather than medical readers. Some journals, like the Chinese Repository, the Chinese Recorder, the Bulletin of the Royal Asiatic Society, were not unwilling to publish articles by medical men or on matters medical, but again due consideration had to be taken of the fact that they were mainly destined for laymen, however erudite. The Customs Medical Reports on the other hand permitted, for the first time in the modern history of Chinese medicine, of the regular publication of articles strictly addressed to the medical

(414) It would seem that Dr. Jamieson served at first in this editorial capacity only inasmuch as the Report on the Health of Shanghai contained in the First Issue was written by Dr. George Barton. The latter soon resigned, however, so that the 2nd Shanghai Report was issued by Jamieson.

(415) The last reports edited by him were Nos. 45 & 46 (October 1892—September 1893), forwarded on May 15, 1895.

(416) Part of the reports contained therein as well as some in later years were published in the China Medical Journal.

profession. Not only were the Customs Medical Officers allowed all the space they desired, but Dr. Jamieson—undoubtedly with the consent of Hart—wisely included in the files, well-chosen contributions by authors unconnected with the Service. If we refrain from singling out writers and papers most worthy of praise, we do this, not only because it would be difficult to do justice to all, but also because the references to this volume clearly show to what high degree even the modern historiographer and epidemiologist is indebted to the enterprise instituted by Dr. Jamieson and Sir Robert Hart.

The only drawback of the series is the total absence of indices so that the individual reader has to make considerable efforts in order to have access to all corners of this veritable treasure-house of information. To remedy this situation, Surgeon-General C. A. Gordon (author of "China from a Medical Point of View") published in 1884 an "Epitome" of the Customs Medical Reports from 1871-1882(417); this forms an excellent guide to the original and contains ample quotations. Unfortunately this work, the value of which is enhanced by the addition of information collected from other sources as well as a good index, seems as rare as the early issues of the Reports themselves. Recently a useful little index, covering the whole series, has been published by Dr. J. L. Maxwell(418).

The next event of special importance is the development of public health activities in Shanghai, the modest beginnings of which have been described in the preceding chapter. In 1873, when an alarm of cholera reached Shanghai, Sanitary Regulations for the Port were promulgated (in Chinese, English and French) by the Taotai with the consent of the foreign consuls. So far as we know, these were the first elaborate quarantine rules ever adopted in China and we feel justified in reproducing them here(419):—

SANITARY REGULATIONS FOR THE PORT OF SHANGHAI

1. It rests with the Superintendent of Customs and the Consuls to determine the places to be considered infected. When any place shall be declared INFECTED the Superintendent will notify the Harbour Master, and he the officer in charge at Woosung.

2. On boarding vessels at Woosung the officer in charge will, if the vessel is from any place declared to be INFECTED, hand a copy of these Regulations to the Master, and request him to hoist a yellow flag at the fore, while proceeding towards Shanghai.

3. On being informed that a vessel is coming up with the yellow flag at the fore, the Harbour Master will send the Health Officer on board.

(417) London, Bailliere, Tindall & Cox.

(418) See China Med. J., 1930, p. 1137.

(419) See Jamieson's Report on the Health of Shanghai for the Half-year ending March 31, 1874, Customs Med. Reports No. 7 (1873-74), p. 38.

4. The Harbour Master will order such vessels to anchor one mile below the lower limit of the Harbour, and will place river police constables to keep watch outside the vessel so as to allow no one to go on board or leave her pending the Health Officer's decision.

5. If there has been no case of infectious disease during the voyage, the vessel may be admitted to pratique at once.

If there has been a case of infectious disease during the voyage, and such diseased person has left the vessel during the voyage, the vessel may be admitted to pratique at once.

If there has been a case of death from infectious disease during the voyage, the vessel may be quarantined for one or two days.

If there have been many cases of infectious disease during the voyage, the Health Officer may order the vessel to proceed outside of the Red Buoy at Woosung. Measures may then be taken to remove all infected persons, and to purify the vessel and cargo.

But no cargo may be removed and no person may be allowed to leave the ship or to go on board without the sanction of the Health Officer.

In any case the time of quarantine may be extended or continued at the discretion of the Health Officer and the Consul concerned.

6. The Health Officer will report to the Harbour Master and he to his superior, and the Consul concerned.

7. In accordance with Local Rule 17, and Regulation VII of the Pilotage Regulations, Pilots shall not leave such vessels until authorised to do so by the Harbour Master, and they will request tug boats to "tow ahead" vessels coming into port under their charge with infectious disease on board.

8. Any person who commits a breach of these Regulations will be dealt with by the Authority to whose jurisdiction he is amenable.

Dr. Jamieson criticized these regulations severely, though most adequately:

In Shanghai with its complex creek communications, any attempt to shut out a disease by blocking the river alone must prove abortive. Further, unless native vessels are subjected to regulations equally stringent with those imposed on foreign vessels the attempt, even as limited to importation from seawards, must fail. The articles were evidently drawn up without adequate consideration or skilled advice. For example, under the second clause of Article 5, a vessel might be admitted to pratique at once although during say, seven days run from Yokohama a patient violently delirious from small-pox should have thrown himself over board, or, to take a less extreme case, had been landed at Nagasaki. No Health Officer has been appointed under the regulations. So much for the regulations themselves. It may be laid down generally that it is only a pretence at quarantine that is possible to a great commercial community, and that such pretence in so far as it tends to inspire false confidence is worse than vain.

Good progress was made in municipal health work. In 1868-69 the Police Surgeon of the International Settlement, J. G. S. Coghill, undertook part-time supervisory duties in connection with Public Health. He was soon relieved by Dr. Edward Henderson who wrote his first short report during the year ending March 31, 1870, and held the joint post of Police Surgeon and Municipal Health Officer (part-time) until 1898 when Dr. Arthur Stanley was appointed as full-time Health Officer (366, 420).

(420) Shanghai Municipal Report for the Year ending March 31, 1870, pp. 7, 57. Up to 1870 the Municipal reports contained only very short reports of the Police Surgeon, which mainly dealt with the health of the force and only occasionally alluded to public cleanliness and similar matters.

The next report of Henderson(421) was already of adequate length and contained interesting information. Specially noteworthy is that, thanks to his initiative and the ready response of the private practitioners, in the course of the year 1870 proper *death certificates* came into use—naturally only in cases which were in the hands of modern-trained doctors.

One of the first things which attracted Dr. Henderson's attention was the prevalence of venereal diseases, due principally to the great number of Chinese prostitutes in the back streets of the Settlement and the absence of any legislation in the matter(422). He presented the problem in 1869 to the Municipal Council which decided in its turn that a regular system of Chinese brothel inspection should be inaugurated. The first round made by Dr. Henderson in August, 1869, showed the houses to be mostly dark, dirty and unfurnished, without any washing facilities. No general manifestation of venereal disease could be found upon some forty girls inspected, but a genital examination was out of the question on account of prejudices as well as of lack of facilities.

In the same month the Police superintendent submitted a scheme which

recommended the establishment of a hospital, to be termed a Home, placed under the superintendence of the Municipal medical officer, to which all suffering from disease were to be sent by a native doctor who, at a salary of \$30 per month, should be engaged to visit the houses and inspect the inmates.

It was further proposed by him that the necessary expense should be defrayed by a subscription of 50 cents per girl a month to be collected from the brothel keepers.

Dr. Massais, French Municipal Medical Officer, advocated a system of registration modelled on the plan of French cities.

A *Chinese Lock Hospital* was actually opened in Honan Road in 1869 but was closed in 1870 as up to the end of the year 1869, but one patient had been sent there and a change in the Chinese inspecting doctor failed to improve the situation.

The problem of prostitution and a proper lock hospital continued to form the subject of many reports and discussions, but it was not

(421) Shanghai Municipal Report for the Year ending March 31, 1871.

(422) The number of prostitutes in 1869 was as follows:

	Total		Freq. by foreigners	
	Houses:	Prostitutes:	Houses:	Prostitutes:
Anglo-American Settlement:	463	1,612	97	311
French Concession:	250	2,600	24	90

Only few foreign prostitutes were present and they were available only to persons with considerable means. (For this and the following information see *China Medical Jl.*, Supplement No. 1., January 1924).

before 1877 that the following tentative scheme was put in force by both municipalities jointly:

1. Licensing of public women;
2. Registration of brothels and women;
3. Weekly examination of Chinese brothels with foreign clientage;
4. Treatment of voluntarily submitting women in a lock hospital;
5. Closing of brothels under order from the mixed court if one or more inmates object to treatment.

N.B.—No rules were framed in regard to foreign prostitutes as they availed themselves of medical advice.

1878 reports on this scheme were favourable. In 1879, however, Dr. Jamieson moved that the appropriation for the Lock Hospital should be struck out of the budget because in his experience, venereal disease had increased rather than diminished since the scheme was put into force. Drs. Zachariae and Galle of the hospital as well as Dr. Johnston, medical attendant at the Sailors' Home, cited facts to the contrary and the scheme remained in force. In the year 1886 another strong protest against the system was made by Dr. Henderson, again without result. It was not until 1900 that the Lock Hospital, then in Foochow Road, was vacated, "the accommodation of these patients forming an essential part of the new Isolation Hospital."

Another problem which came into the foreground during the time now under review was the nearly universal practice of binding the feet of Chinese girls. Opinions of the missionaries on this point were divided. While some wanted to leave the question to the conscience of the individuals, others advocated decisive steps. Thus in 1867 a mission school in Hangchow required all girls for whom it provided board and clothing to unbind their feet—an example followed by some other schools. In 1874 an *Anti-Foot-Binding Society* was organised at Amoy by Chinese Women under missionary auspices and the problem continued to be discussed at missionary conventions like the 1877 Shanghai Conference (423).

Mention must be made at the present juncture of the organisation of the Tung Wah Hospital in Hongkong to replace the *Ts'z I* or *Shih Yi* described in a previous chapter. It would seem that both the subscribers to this institution and the authorities did not supervise it in any way; in fact it even appears to have been an unsettled question which government department was responsible for it. The result was that the *Ts'z I* was found in an appallingly bad condition when visited in 1869 by Messrs. Lister and Stewart. The Governor, Sir Richard Macdonnell, acted with energy and the establishment was peremptorily closed. However, not only was there a decided need for

(423) Latourette, l.c., p. 462. For the further history of this movement see *Encyclopaedia Sinica*, p. 30.

carrying out the benevolent ideas which had led to the foundation of the *Ts'z I*, but it was thought that the better class Chinese, who keenly felt the disgrace of this establishment, would be particularly willing to subscribe for a proper Chinese hospital. In fact in August, 1869, the Governor reported to the Secretary of State that subscriptions had already amounted to \$30,000. The Colonial authorities on the other hand had at their disposal a large sum obtained through licensing gambling houses—a policy which was strongly disapproved of by the Home Government(424). It was decided to devote a large portion of this "Special Fund" (\$115,000) for establishing a Chinese hospital besides granting a site near that of the old *Ts'z I*.

The foundation stone of the new *Tung Wah Hospital* was laid in April, 1870, and about two years later (February 14, 1872) it was declared open. The building, capable of accommodating 80-100 patients, had cost \$45,000; a third of this sum had been defrayed from the Government endowment the balance of which was held in trust by the Registrar General, then the "Official Protector" of the Chinese in the Colony. A strong committee was made responsible for the conduct of the establishment while provision was made for supervision through government officials.

The duties of the new establishment were manifold. It not only provided a comfortable shelter for the moribund but also cared for patients in general—both poor and rich. Great stress was laid upon vaccination, one of the three practitioners originally employed devoting himself entirely to this purpose. Moreover, refuge was given to the poor who also were assisted in many other ways, and the destitute dead were buried. It can thus be seen that in its early days the *Tung Wah Hospital* was run on the lines of the Chinese benevolent institutions previously described. We will return to its remarkable evolution in a later chapter(425).

Canton. Turning now to a contemplation of the hospital work we propose, as previously, to deal first with *Canton*. The New Missionary Society's hospital, which opened with a simple ceremony on October 1, 1866, consisted originally of a two-storeyed building, 82 by 47 feet, with 8 wards; two of them had to be temporarily used as the physician's residence, a third as a chapel(426). Thus the accommodation available (for 60-70 patients) soon proved insufficient, the more so as it had been resolved to use the *Kam-li-fau Hospital* for out-patients only—a measure which came in full force early in

(424) Chinese Recorder, Vol. XVII, p. 123.

(425) Report of the "Commission to Enquire into the Working & Organisation of the *Tung Wah Hospital*." Printed 1896, reprinted 1929.

(426) Kerr, *China Med. Miss. Jl.*, 1896, p. 55.—The following data are mainly culled from the original reports quoted above.

1867. It served in this capacity until 1870 when it was closed because the owner sold the building which was soon afterwards pulled down.

To take care of the increasing number of in-patients (the care for whom rather than for out-patients was considered as the main object), occasional use had to be made of the chapel and some neighbouring shops, given rent-free by their owner until new permanent accommodation became available. The building program, as summarised by Kerr in his 1869 report was thus:—

1865	Lot bought	\$6,400
1866	Building (8 wards)	3,500
1867	Chapel and prescribing room	1,200
	Two temporary wards (427)	250
1868	Sundry improvements	400
1869	Physician's house and kitchen	5,316

N.B.—2 additional wards were completed at a cost of \$600 in 1872, 2 more in the year following, the total accommodation being in 1874, 120 beds (428).

A noteworthy feature of this period was the attempt made by Dr. Kerr to provide accommodation for *insane* patients: In his 1872 report he pointed out that the supposed rarity of such cases was more apparent than real and recommended the establishment of an asylum—on a small scale at first—where the curability of such patients might be demonstrated and the pupils instructed at the same time. He was seconded by Faber who had come across maltreated mental cases. Action was taken early in 1874 when the Standing Committee (429) and Dr. Kerr were authorised to take steps for erection of a ward for 6-8 mentally diseased. Opinions of the annual assembly on this point were so much divided that the chairman had to cast the vote in favour of the proposal. At the next annual meeting (1875) the Standing Committee took a decided stand against this project saying that to care for insane patients in addition to his manifold other duties would prove too much for Dr. Kerr. Since from 1873 onwards separate rooms had been given to patients able and willing to pay a monthly rent of *one tael* (\$1.40), the Committee proposed to create, instead, special wards for this class. The assembly agreed, voting \$400 for the purpose. As we shall see, this was but one of the disappointments Kerr was destined to suffer until he realised his cherished dream of an asylum for the insane.

From the fact that the Medical Missionary Society was able to carry out such an extensive building program it will be gathered that

(427) To shelter patients who could not conveniently be kept in the main wards.

(428) Chin. Recorder, Vol. VII, pp. 174-201.

(429) Such a committee was installed at the annual meeting in January, 1872. Its main duty was to confer with Dr. Kerr throughout the year in regard to improvements.

its financial position was a sound one. While the bulk of the subscriptions still came from foreigners, the amount of Chinese contributions—though fluctuating—showed in general a satisfactory increase. Dr. Kerr was very optimistic in regard to the future role of the Chinese in the conduct of the hospital and spoke in his 1866 Report of the time when it would be “as independent of foreign skill, as we hope it will be of foreign money.”

Certainly there was every reason to be pleased with the activity of the Chinese doctors and assistants. This became specially evident in the year 1867 when Dr. Kerr on account of illness in his family went on furlough(430). The hospital was for the nine months of his absence nominally under the Rev. C. F. Preston, but actually conducted by Dr. Wong Fun with the capable assistance of the pupils, especially Wu Achung who had by then taken Kwan Ato's place. Many difficult operations, including 17 for calculus, were undertaken by Dr. Wong Fun, while the assistants did all the minor surgery and operated most of the eye cases. Commenting upon Dr. Wong Fun's report Dr. Kerr said that it

gives abundant evidence of the acquirements of the pupils, and of the confidence of the people in their countrymen who have been educated in the foreign art of Medicine and Surgery. The hospital was indeed, during nine months, conducted entirely by Chinese, and the number of surgical operations during that time perhaps greater than in any equal period of time before.

A sad event with which we have to deal in this connection was the death of Kwan Ato, announced at the 36th annual meeting of the Society (January 21, 1875). A letter from Dr. Parker, expressing appreciation of the deceased, was read and the following record spread upon the minutes(431):—

We have to record the death of Kwan Ato, the first Chinese who acquired a knowledge of Western Medicine and Surgery.....He died early in June, at the age of 56 years, when he should still have been in the prime of life.

This event carries the mind back to the days when Parker, in the glow of early manhood, devoted himself with ardour and assiduity to the benevolent purposes of the Society, and wrung admiration from a haughty official class, and a reluctant gentry. At first, a few of the poor came stealthily to his rooms, in the hong, increasing to hundreds, and gradually to thousands; and thus were scattered the fructifying seeds of good-will, which bore fruit in mitigating the asperities of war and spreading a conciliating influence whose measure no man can estimate.

Among the instrumentalities of this practical benevolence, the useful career of Kwan Ato may be instanced.....He served as assistant in the hospital under both Dr. Parker and Dr. Kerr, down to the war of 1856; after which, for a considerable period, he held a Government employment in Fukien, but upon the restoration of peace, again aided Dr. Kerr. The past ten (?) years, however, he has devoted himself to the extensive practice of his profession

(430) Dr. Happer, one of the Vice-Presidents of the Society, left two months after him in May and returned to Canton in January, 1870 (428).

(431) The substance of this had appeared immediately after Kwan Ato's death in the “China Mail.”

among the higher classes of his countrymen, with great acceptance and ample gain.

He was above the medium stature, and of dignified deportment, and general prepossessing appearance; and withal so strong and healthy looking until recently, that his death is a surprise to most persons. We may hope that the thorough training and the long practice he had in Medicine and Surgery, under the eminently skilful Doctors Parker and Kerr, enabled him to influence the younger practitioners among his countrymen, so that the good he was capable of, shall remain as something more than a tradition.

It was stated upon the same occasion that Kwan Ato's and Wu Achung's successor (? So To-meng) had performed about one third of the 55 cataract operations and had

acquired a skill in the operation and the after treatment, which gives good promise of his future success as an oculist.

It may be added that in 1876, when Dr. Kerr went again on furlough, Dr. J. F. Carrow of the American Presbyterian Mission, took charge of the hospital. In October 1878, when he became Dr. Wong Fun's successor as Customs Medical Officer, he had to give up this work so that the hospital was practically closed until Kerr's return in January, 1879 (432).

Outstanding surgical events of the period now contemplated were: (a) the first stone operation in a *female* in 1874, the total of operations performed up to then being 368 (301 lithotomy—mostly by perineal section—and 67 lithotrity);

(b) an attempt to perform *ovariotomy* in 1875 which however remained unsuccessful on account of extensive adhesions. Successful operations of this kind were performed by Kerr in 1880 and (according to Cadbury and Jones) in 1877 already by Dr. Carrow.

In spite of vastly increased surgical work the Canton hospital remained remarkably free from wound infections. Referring in his 1868 report to a stone operation followed by *pyemia* Dr. Kerr said that this

is the only case in this hospital, in which this very dangerous complication has followed an operation.

Erysipelas, met with in 1874, also caused no havoc. Kerr said:—

During twenty years' experience I had seen but one case, and that was in 1856, in an out-patient from whom I had removed a small tumour of the head. That case was fatal. During the past year (1874) four or five cases occurred, and I was alarmed at the re-appearance of the disease, but fortunately it did not assume a malignant character and no fatal case occurred. Hitherto I had congratulated myself and my patients on the absence of this source of danger after operation, so often fatal in Western hospitals.

The endeavours to cure *opium-addicts* were energetically pursued. In 1868 not less than 117 smokers were treated, each of whom

(432) Kerr, *China Med. Miss. J.*, 1896, p. 95.—Cadbury and Jones state (pp. 102, 126) that Kerr went home in 1875.

had to make a deposit of \$1 as security for a sufficiently long continuance of the cure. Only 3 forfeited the money. When the patients, who usually wanted to get rid of the habit because driven to the verge of ruin, were earnest in their desire, 10-12 days were sufficient to wean them from the drug. Kerr entertained no doubt that many were permanently relieved. He seemed somewhat less optimistic in 1873, when he stated that some certainly were cured for ever. It is added that the patients were given at first pills containing a small dose of opium besides camphora and ipecacuanha, not so much with the idea of allowing them to "taper off" as for giving them moral support. A noteworthy point of the 1874 report is that two of the 212 addicts admitted were women. Dr. Carrow recorded in his 1878 report that a special ward had been set aside for this class of patient.

During the period now under contemplation the work of the Missionary Hospital at Canton began to be supplemented by that of *Chinese benevolent institutions*. A "Hall of Sustaining Love" (Oi Yuk Tong—愛空育) was opened in 1871 in the former residence of the last survivor of the old *Hong* merchants, whose property had been seized by the Government. This institution not only ran a hospital and free dispensary but supported schools, distributed food and coffins to the poor and helped widows. Kerr—remembering the deplorable Tientsin incident(433)—seems to have been somewhat displeased at the opening of this establishment but did not consider it a serious rival to his hospital; for instance no surgical cases were admitted. Yet he found the expenditure too high (\$60,000 were

(433) In Tientsin "ill-will was quite naturally felt toward the foreigner who, in the preceding war, had so truculently forced himself on the city. The animosity seems to have been especially strong against the French. French troops are said to have left a bad name behind them after the occupation of the city, and a Catholic church—named with strange disregard for Chinese feelings, *Nôtre Dame des Victoires*—and the adjoining French Consulate were erected on the sites of a temple and government buildings. In an atmosphere so charged with rancor, anti-foreign rumors had easy currency. Neither the populace nor the officials were disposed to be critical when it began to be hinted that the sisters in charge of the Catholic orphanage were kidnapping children and were extracting the eyes and hearts of the unhappy waifs to manufacture charms and medicines. The deaths of those to whom baptism was administered in *articulo mortis*, and an epidemic which visited the orphanage early in June, 1870, served to accentuate the reports. Some Chinese were accused of selling children to the sisters and were tried and executed: another confessed under torture that he had been guilty of the same offense. After some delay the Chinese authorities conducted an investigation and partly exonerated the orphanage. The populace, however, was in a dangerous mood and threatened to get out of hand. The needed incentive appears to have been supplied by the French Consul, who completely lost his temper and fired at the Imperial Commissioner and one of the local officials, the *Hsien*. A mob thereupon destroyed the orphanage, the French Consulate, and the adjoining church, and killed such Frenchmen, as it could lay its hands on" (Latourette, l.c. pp. 350-51). Other records (e.g. Encyclopaedia Sinica, p. 557) deny the accusation that the French Consul made use of his revolver.

raised) and was led to believe that the real reason for this action was to prove to foreigners that the Chinese were able to do things on a greater scale than they. In his 1873 report he refers to it with his usual objectivity, subjoining the budget of the institution for 1872:—

Salary to 4 practitioners @ £20 p.m.	\$1,300.00
Salary to managers	405.46
Wages	173.94
To drug stores for 37,758 prescriptions	1,797.38
Food for employees	849.77
	<hr/>
	\$4,526.55

An 1889 report emphasizes the sound financial position of the establishment which by then owned landed property (434).

Another institution, the *Fong Pin Sho*, founded in the year 1874 and supported mainly by donations from the official class, restricted its benevolent activities to persons incurably ill and bereft at the same time of friends and means. In 1888 it recorded 937 admissions and lost 607 inmates through death (435).

The work at the *out-stations* of the Medical Missionary Society was continued as far as circumstances permitted. In 1866 a new dispensary in connection with the London Missionary Society was opened at *Pok-lo* (博羅) and was put under Leung Man-shing, a former pupil of the Kam-li-fau Hospital. Dr. Graves, in charge of the stations at *Shiu-hing* and *Wu Chau* (Ng-chan-fu), had in the same year to deplore the death of his principal medical assistant Luk, who, after having worked with him for six years, died of consumption. Regular work at *Shiu-hing* was apparently carried on until 1869 when Graves again had the misfortune to lose the assistant stationed there. The troubles arising after the Tientsin incident (436) led also in 1871 to the closing of the *Wu Chau* dispensary. Two years later (May, 1873) Dr. Graves opened a new station at *Sai-nam* (西貢), 30-40 miles west of Canton at the junction of the North and West rivers; the medical work there was entrusted to Wong Fong, a former pupil of Kerr, who had been driven away from *Wu Chau*. In the middle of the year 1874, Wong Fong, on account of the death of his father, had to remove to Canton. His successor was Young Ying who had spent three years under Dr. Kerr and though very young, proved most satisfactory. He seems to have received

(434) *China Med. Miss. Jl.*, 1889, p. 152.

(435) *Ibidem*, p. 66.

(436) A rumour was wide-spread that poisonous pills, *Shan-si-fan*, were distributed by the foreigners.

an initial salary of \$4 per month. According to an 1876 report (428), two qualified Chinese were employed; the average annual attendance was 5,000 and \$150 were spent per annum.

The Rev. Krolczyk appears to have reassumed charge of the *Shek-lung* dispensary in 1866; he saw patients mainly on market days (nine each month), an average of 25 attending upon each occasion. A few in-patients who had to be admitted were temporarily sheltered in the chapel and school room until the liberality of the Hongkong community provided means for a small hospital and for a continuation of Krolczyk's frequent trips. He learnt that two former pupils of Kerr were most successful at Tam-shui and Wai-chau, while one of his own former assistants did equally well at San-tong (新塘), midway between Canton and Shek-lung, even performing cataract operations.

When the 1871 troubles led to the closing of the *Shek-lung* dispensary, Krolczyk proposed to transfer the centre of his activities to Ho-au, a village between Hongkong and Wai-chau where Genaehr and Goecking had formerly worked; Wong-yun-shan, a pupil of Krolczyk and lately with the Rev. Nacken, was to be in immediate charge. Krolczyk bestowed much praise upon this man, saying that

he is the most skilled and experienced of our native assistants, and at the same time a man of excellent and trustworthy character, who has won the confidence and high esteem of the people wherever he has been, whether in *Shek-lung* or in *Tung-kun*.

The plan was cut short by the death of Rev. Krolczyk in the year 1872. However, he had organised additional work in places visited during his numerous excursions. In 1868 he had already reported the opening of a dispensary at *Tungkun* (東莞) (437) where his assistant Wong-Sin-shan was stationed. Originally the Rev. Faber was destined to supervise the work, but actually the Rev. J. Nacken took charge, assisted by Wong Yun (?). Activities at this station were partially interrupted in 1870 and came to a standstill in 1871. Later, Nacken opened in 1874 a regular dispensary under the Medical Missionary Society in *Fuk-wing* (福永) on the Canton River bay in the San-on district where the Rev. W. Louis of the Rhenish Missionary Society had previously distributed medicines to the poor. Nacken left within a year or two, the Rev. Louis resuming charge.

Faber seems to have begun medical work at *Fu-mun*, four miles north of the Bogue Forts, in 1869. In his report for 1870 he refers to the opening of a chapel in *Taiping* (太平) near the Bogue, the keeper of which was a respectable Chinese physician deeply interested

(437) Here also an old-style practitioner had opened an ophthalmic hospital. He was unaided by the magistrate but enjoyed the hearty support of the people.

in western medicine. Here, also, a former pupil of the Macao Hospital with some experience in surgery was most successful in private practice. In 1874 Faber also reopened the Tungkun dispensary. He was succeeded in 1876 by the Missionary Dilthey.

In 1870 an attempt was made to re-establish the *Fatshan* dispensary, but on account of the troublous times it was closed after a few months.

It will be gathered from the above account that in several places near Canton, western medical methods had by then become so popular that quite a number of Chinese graduates found an ample field for activity. In fact Faber, in his 1870 report, found the time ripe for an agency to sell medical books and instruments to these men.

Amoy. A most glorious chapter in the medical history of *Amoy* began with the arrival of Dr. Patrick Manson in the year 1871. He not only began to work jointly with Dr. August Mueller as Customs Medical Officer (replacing Dr. Jones) but was—most fortunately—as partner in the firm founded by Dr. Carnegie also in charge of the Missionary Hospital. As we have seen, this was at the time of Manson's coming, still in a Chinese house and much overcrowded, but in 1874 the patients were transferred to a properly designed building.

Rev. A. L. Warnshuis, formerly with the American Reformed Church Mission at Amoy and now head of the Mission Board in New York, informed us that Dr. Manson obtained through the influence of the U.S. Consul Kemper, formerly a Confederate Officer, a piece of land for an Infectious Diseases Hospital, to serve especially for coolies proceeding to the South Seas. Mr. Kemper craftily inserted a clause in the title-deeds that should the land not be used for hospital purposes—it would be turned over to the American Consulate. Years after Manson had left, it was found that the ex-hospital was being used as a shop. Then a smart U.S. Consul looked up the files, found the clause and took over the property, reserving an isolated hut for any infectious case. However, when an American sailor with smallpox was actually admitted into the Consulate compound there was a furor, much reporting to the State Department and the hospital was abolished. A new U.S. Consulate was built upon the site, and this at present remains on the land originally obtained by Dr. Manson for the first Infectious Diseases, later Community, Hospital at Amoy.

In conducting the hospital, Manson was not slow to recognise the advantage of performing his work with all the publicity adopted by the Chinese practitioners. He said in this respect:—

Our work is good and honest, and nothing should be left undone to make this generally known. We may not be able to prevent the malevolent and the gossips defaming our character, or thieves and impostors swindling in our name; but we can by a very few simple arrangements make the real nature of our work evident to the public.....

Hence he had the consulting room and dispensary removed from the top storey to the street-side of the ground-floor, exposed to the glance of passers-by. At the same time, however, he was careful to arrange for a separate waiting-room for women.

Another point of hospital policy, which Manson found at fault, was the entirely gratuitous treatment by which many who could well afford to pay, were unjustly benefited, while the proud official classes whose good-will was most desirable, were kept away. He therefore opened in the centre of the town a consulting room and small hospital where he received paying patients. The mandarins and rich merchants soon came. As Manson's biographers say(438), the first patient was

one of the principal druggists of Amoy, in whom, and to the friends who accompanied him, Manson was able to demonstrate the presence of a calculus. This cautious man, however, would not consent to its removal until he applied for his mother's blessing, and also had watched Manson perform some operations—one of them a propitious lithotomy—at the native hospital, and had observed the results.

The staff of the Amoy Missionary Hospital consisted, at the time when Manson took over, of a house-surgeon, Dr. Kuitsong, and two dressers. When the last two left he encouraged other youths to join, taking for the most part Christian students recommended by the missionaries. Though remarkably successful in this early educational work, the difficulties besetting his path were considerable. Again to quote his biographers

in the ninth year of Manson's régime at Amoy there arose a missionary of the rigorous proselytizing 'hot-gospeller' species, who convinced himself that in Manson's competent hands the mission hospital had become merely an appendage for a medical school and had ceased to be an 'agency for the spread of the gospel,' and this worthy almost persuaded the missionaries to relinquish their interest in the place (439).

It was also not easy to find openings for the graduates and to set them up in practice. However, Manson was always willing to make them loans for the purchase of instruments and drugs; he was not only repaid in due course, but had the satisfaction of seeing several of his former pupils prosper. Manson's biographers assert that it was just this fact which aroused the ire of the missionary mentioned. One can certainly understand that he wished to see these young men continue in the service of the mission, but like the founders of the Medical Missionary Society, he ought not to have been blind to the greater boon they were apt to confer when at work among the popula-

(438) See Manson-Bahr & Alcock, l.c. (413), from where most of the above data are taken.

(439) According to the "Century of Protestant Missions" (p. 376) the missions actually withdrew their support in 1879.

tion. Manson was certainly right when contending[•] that his educational schemes "contained the germs of great results."

Teaching as well as routine tasks in the hospital and Customs would have provided more than enough work for an ordinary man. For Manson they formed but the stepping stone to splendid scientific achievements. In dealing now with these, we propose to follow as closely as possible Manson's contributions to the Customs Medical Reports which are not easily accessible to the general reader.

The first of these(440), written by Mueller and Manson, began with a general description of the climate and habits of the people. The apparent absence of many infectious diseases like typhus, typhoid, scarlet fever, measles, relapsing fever and diphtheria is emphasised. Among the chief causes of mortality, small-pox comes first, then malarial diseases and their consequences, next perhaps cholera and leprosy. Other diseases like phthisis, pneumonia and cancer were likewise rife enough.

Having dealt with the health of the foreigners, the authors then turn to a discussion "of three cases of a peculiar form of scrotal disease of which we can find no description in the usual authorities"—perhaps an atypical form of elephantiasis. Finally the subject of leprosy is discussed which was present in not less than 7 per cent of those seeking the aid of the hospital. Notes on 50 patients affected with this dreadful disease are added. While the regulation restricting them to certain quarters was not strictly enforced and they were allowed to intermarry, marriage between a leper and a non-leper was strictly prohibited. The reason probably lay in the popular belief that a race of lepers, when intermarrying, becomes extinct in three or four generations.

The next report(441) contained besides general notes (including short post mortem findings in two foreign cases) the first great achievement of Manson—an exhaustive description of a modified operation for elephantiasis of the scrotum illustrated by some drawings and short histories of ten cases treated by the method(442).

Manson was so impressed with the importance of this subject that he made in 1874, with the assistance of Dr. Kuitsong, a Chinese translation of Curling's "Diseases of the Testis," adding a chapter on

(440) Customs Medical Reports No. 2 (1871), pp. 10-23.

(441) Mueller & Manson, Customs Med. Rep. No. 3 (1872), pp. 22-33.

(442) The first of the patients operated, aet. 19, had been driven to such despair by his illness that he twice attempted suicide before presenting himself at the hospital—to be cured either or to be delivered by death if the operation failed. Fortunately he made a rapid, recovery thus encouraging others to undergo operation (Manson-Bahr & Alcock).

the anatomy of the region and an appendix describing his operative method.

The bulk of the third report(443) consists of a classical description of a Dengue epidemic, which had apparently been absent from Amoy for many years and seemed imported from the Straits Settlements by returning emigrants.

In the next account, written by Manson alone(444), reference is made to an "epidemic of syphilis," chiefly amongst sailors. Manson then passes on to a description of five further cases of "lymph scrotum" similar to those published in the first report and illustrates the cytological findings in the exudate of one of them. He concludes that

there may be some radical difference between this and the ordinary form of elephantiasis, rendering this "lymph scrotum" a disease *sui generis*.

The second report issued in 1873(445) was the joint work of Dr. Patrick and his brother David Manson, who was from 1871 onwards Customs Medical Officer at Takow and Taiwanfu.

In consequence of the cholera prevailing in India and the Straits

a quarantine was established for some time for vessels coming from infected ports. The crews were inspected before entering the inner harbour, but fortunately in no instance did anything like a history of cholera present itself so as to make isolation necessary.

The authors then turn to a discussion of two forms of anaemia, (a) consequent upon malarial disease, (b) due to deficient and improper food. Their comments upon the second form especially are of great interest, one of the conclusions reached being that certain national characteristics of the Chinese like "the strong conservative propensities, the superstitious reverence for precedent, the patience under oppression" are "not the deliberate elections of philosophic experience" but rather the result of the almost universal defective nutrition.

In their record for the half-year ended March 31, 1874(446), the Drs. Manson first allude to two autopsies—one of them in a case of *liver abscess*—both performed upon foreigners (447). After dealing with the remarkable case of a naturalist who harboured for some time a leech in his nose, they give further notes upon the surgery of elephantiasis. Up to then 31 cases had been treated according to Dr. Patrick's method "without a single death or serious mishap."

(443) Mueller & Manson, Customs Med. Rep. No. 4 (1872), pp. 7-23.

(444) Dto. No. 5, (1872-73), pp. 7-14.

(445) Dto. No. 6, (1873), pp. 20-32.

(446) Dto. No. 7, (1873-74), pp. 26-32.

(447) Such were also occasionally performed in previous years.

The following report(448) was written by Drs. C. M. Jones, F.R.C.S. and David Manson, Dr. Patrick having gone to England at the end of the year 1874. Working in London he attended the Eye Hospital at Moorfields so as to become familiar with ocular surgery. Having no introduction to scientific circles he also spent much time in the Library of the British Museum. Trying to gather all available information in regard to chyluria and elephantiasis he learnt of a microscopic nematode worm, *Filaria sanguinis hominis*, that had been found in Calcutta by Timothy Lewis. As Manson's biographers aptly say

this piece of information was to him the grain of mustard seed, which he took and sowed in his field when he got back to Amoy, where it grew into one of the greatest amongst herbs for the service of men whose pabulum is Tropical Medicine.

Having married in December, 1875, Miss Henrietta Isabella Thurburn, Manson, together with his wife, immediately left England to return, via Italy, to China.

The first fruits of his studies in London were embodied in an article "Remarks on Lymph Scrotum, Elephantiasis and Chyluria" (449). After giving a synopsis of the literature he was able to gather he set out to establish:

First, the generic identity of the lymph scrotum and the ordinary form of elephantiasis; second, the generic identity of elephantiasis and tropical chyluria; third, to bring forward evidence to support the inference that these three diseases acknowledged the same etiological cause; and lastly, this cause to be the filaria of Lewis.

Of greatest interest naturally is the fourth part of Manson's thesis. In it, basing upon investigations of Lewis on an analogous parasitic affection among the pariah dogs of Calcutta, he came to the conclusion

that in some similar manner the *filaria sanguinis hominis* is lodged and obtains access to the blood; that the mature nematode is lodged in the walls or neighbourhood of an artery, vein or lymphatic, and through a rupture in the lining of such vessel it pours its brood of ova or immature *filarias* into the blood, where they may be afterwards found when searched for.

Dr. P. Manson jointly with his brother issued the Customs Report for the Half-year ending September 30, 1876(450). Here, besides some general notes and "Remarks upon a common form of Dysphagia, with cases", reference is made to the first two deaths in a series of 61 cases operated for elephantiasis. One of them was due to tetanus, the other to pyemia. It is added that

pyemia, erysipelas and allied diseases are fortunately very rare, notwithstanding the overcrowding, the great number of open suppurating wounds, and the imperfect sanitary condition in the native hospital.

(448) Customs Med. Rep. No. 8, (1874), pp. 67-70.

(449) Dto., No. 10 (1875), pp. 1-14.

(450) Dto., No. 12 (1876), pp. 86-40.

The next report, written by P. Manson alone(451), marks a great step forward. After a careful description of *Filaria immitis* and *F. sanguinolenta* and the changes caused by them in dogs he turned to the subject of human filariasis. While deploring that the prejudice against autopsies prevented the putting of some of his conjectures to the test Manson noted having found numerous embryo filariae in the blood of a patient who came for removal of an *elephantiasis scroti*. He was

thus enabled to state positively that elephantiasis Arabum is a parasitic disease, and to establish on solid and incontrovertible grounds, what in a former report I conjectured was the true pathology of this puzzling affection.

Manson goes on to say that with the help of two Chinese assistants he began a systematic examination of human blood for the *filaria sanguinis hominis*. Out of over 190 cases positive findings were made in 15 (i.e. about 8 per cent). Results are thus summarised:

1. That a large ratio of the population of this province...is infested with the *Filaria sanguinis hominis*. . . .
2. That this may be present in the blood, and yet the host be in good health, and exhibit no other morbid phenomena.
3. That in the same person it may be present at one time and absent at another.
4. That at one time or another it is very generally associated with elephantoid disease, and is almost certainly connected with the cause of such affections.
5. That it is sometimes associated with a diseased condition characterised by frequently recurring attacks of fever, accompanied by general anasarca unconnected with heart or kidney disease.

Manson's findings discussed above were but the harbingers of epochal discoveries published in 1877(452); in an article "Further Observations on *Filaria Sanguinis Hominis*" he first dealt with the degree in which the population in the Amoy district was affected with the parasite, reaching the conclusion that on an average one person in every eight was involved. After a short discussion of his statistics as to age, sex and occupation, he then turned to a scrutiny of the morbid conditions with which the parasite is associated. Referring to his previous hypothesis as to the etiological identity of the various diseases and the role of the "parent of the embryos that Dr. Lewis had discovered in the blood and urine of chyluria cases" he stated:—

I think I have now brought sufficient evidence together to prove my conjecture, although the tests of experiment and post-mortem examination are still wanting. Mere coincidence will not account for the frequent, and in some forms of the disease almost invariable, association of the parasite and the disease; they only stand to each other in the relation of cause and consequence.

(451) Dto., No. 13 (1876-77), pp. 12-38.

(452) Dto., No. 14 (1877), pp. 1-26.

The way in which the cause operates is made sufficiently apparent by the anatomy of the diseased structures, and arguing from what has been observed of the habits of other penetrating filariae, I have concluded that the essential feature of elephantoid disease—obstruction of the lymphatic circulation—is produced by the mechanical interference of the parent parasite with that circulation, higher up the lymphatic system than the seat of the elephantoid disease.

The next point of Manson's paper we may discuss without unduly prolonging this analysis is the description of a *post mortem* in a case long under observation on account of recurring fever, anasarca and debility. He said that

the privilege had to be paid for, and was hampered with the condition that the widow should be present to see that no part of the body was removed. Besides it had to be made secret with closed doors, quickly, and in the room the man died in, a place hardly big enough to turn in. The light was very bad and the heat was overpowering, so from this unfortunate combination of circumstances the examination was far from thorough or satisfactory, and did not result, as I had hoped, in the discovery of the parent worm.

After having proved that the development of the embryos cannot progress far in the host from whom they must therefore escape he thus continued:—

It occurred to me that as the first step in the history of the haematozoon was in the blood, the next might happen in an animal who fed on that fluid. To test this I procured mosquitoes that had fed on the patient Hinlo's blood, and examining the expressed contents of their abdomens from day to day with the microscope, I found that my idea was correct, and that the haematozoon which entered the mosquito a simple structureless animal, left it, after passing through a series of highly interesting metamorphoses, much increased in size, possessing an alimentary canal, and being otherwise suited for an independent existence.

Manson was led by the scanty and unreliable literature at his disposal to believe that the mosquitoes died when depositing their eggs into water and assumed therefore that

it is through the medium of this fluid brought into contact with the tissues of man, and then either piercing the integuments or, what is more probable, being swallowed, the filaria works its way through the alimentary canal to its final resting place.

However, this inability to forge the last link detracts little from the monumental character of Manson's discovery through which he had shown for the first time in the history of mankind that blood-sucking insects may play a most important role in the transmission of disease. And, while pronouncing it with the true humility of the great scientist he was fully aware of its bearing not only on pathology but also on prevention.

Before continuing the discussion on Manson's work, we may state that the regular report on the Health of Amoy accompanying

the above article(453) as well as the following one(454) were written by David Manson, who unfortunately died soon afterwards (1878) of sunstroke while playing cricket at Foochow. To perpetuate his memory, the hospital at Takow, where he had formerly worked, was named after him.

In the 16th issue of the Customs Medical Reports Manson published "Notes on *Tinea Imbricata*, an Undescribed Species of Body Ringworm"(455) as well as a short account on the Health of Amoy(456). This dealt mainly with the clinical and post-mortem findings in a case of liver abscess (foreigner). Aspiration was tried but evidently too late.

"Additional Notes on *Filaria Sanguinis Hominis* and Filaria Disease at Amoy" was published in 1879(457). Here it is noted that—while some of the best authorities on Tropical Diseases accepted Manson's theories—others suspended judgment or were even adverse. Through a series of further observations, the results of which were now made public, Manson adduced additional irrefutable proof for the correctness of his statements. Of special interest was the discovery that the filaria embryos circulate in the blood mainly during the night.

The regular report published by Manson at the same time(458), though short, contained some noteworthy points. For the first time he met with a case of diphtheria in a foreigner; amongst the Chinese this disease seemed rare, but not altogether absent. Some indigenous cases of typhoid fever were encountered while small-pox was unusually rampant.

At the end of March, 1880, Manson contributed(459) "Notes on Sprue" which, he hoped, might direct the attention of others "to a much neglected but very important disease."

In the course of the year 1880, Manson had the satisfaction of proving by actual observation the correctness of his conjecture that the parent worm of the filariae lived in the lymphatic trunks; he found such a parasite in the tissue removed from a patient with "Lymph Scrotum." This man, though in a desperate condition when operated, made a good recovery(460).

(453) Ibidem, p. 27.

(454) Customs Med. Rep. No. 15 (1877-78), p. 25.

(455) Pp. 1-11.

(456) Pp. 12-13.

(457) Customs Med. Rep. No. 18 (1879), pp. 31-51.

(458) Ibidem, pp. 58-59.

(459) Customs Med. Rep. No. 19 (1879-80), pp. 33-37.—The accompanying regular report (p. 30) is very short.

(460) Dto. No. 20, pp. 13-15.

At the same time Manson published, besides a short Health Report(461), notes on (a) an "Epidemic of Continued Fever"(462), (b) *Distoma Ringeri*(463), a lung fluke named in honour of Dr. B. S. Ringer, Customs Medical Officer at Tamsui (Formosa), who had detected it at the autopsy of a Portuguese.

The next Customs Medical Report contained besides a few remarks on the health of Amoy "Notes on Some Skin Diseases"(464) and a short statement on "*Trichina Spiralis* in Chinese Pork." After a prolonged search a few trichinosed pigs were found. Manson adds that the habit of the Chinese to cook pork thoroughly in small pieces renders such meat rather innocuous but warns foreigners to abstain from it or to follow the Chinese method of preparation(465).

Manson's Report on the Health of Amoy for the half-year ending September 30, 1881(466) consisted mainly of a description of the clinical and post mortem findings in two foreign cases of aneurysm. The advice is given that, in view of the extreme frequency of this condition among foreigners in China, it should be suspected whenever symptoms, however trifling, unaccompanied by fever, point to chest disease. Likewise a febrile case with signs of abdominal disease should induce one to consider the possibility of liver abscess.

Further observations on "*Distoma Ringeri* and Parasitical Haemoptysis" were added(467). This condition, while rare in Amoy, was frequently met with in Formosa as well as in Japan where it had been first described by Professor Baelz of Tokyo.

The report finally contains a letter from Manson to Dr. T. Spencer Cobbold, the leading British helminthologist, from the first an ardent supporter of Manson. Here an attempt is made to penetrate the mystery of the periodical appearance of the filaria embryos in the blood(468).

Manson's final contributions to the series are contained in the Customs Medical Reports for 1881-82. In an article "Notes on Filaria Disease"(469) he said:—

(461) Ibidem, p. 1.

(462) Ibidem, pp. 2-9.

(463) Ibidem, pp. 10-12.

(464) Customs Med. Rep. No. 21 (1880-81), pp. 27-36.

(465) Ibidem, p. 26.—Manson's biographers tell that he tried in one human case suspected to suffer from trichinosis, to prove the diagnosis by a partial autopsy (excision of a piece of muscle). Nothing was found and Manson established afterwards that the cases in point actually had beriberi.

(466) Customs Med. Rep. No. 22 (1881), pp. 1-3.

(467) Ibidem, pp. 55-62.

(468) Ibidem, pp. 63-68.

(469) Customs Med. Rep. No. 23 (1881-82), pp. 1-16.

I thought it advisable, as I may not have an opportunity for some time of continuing this work, to give others the benefit of what I have stumbled on, and to bring, incomplete though many of the observations may be, these Reports, as far as my own work is concerned, up to date.

He began by continuing the discussion of the problem of filarial periodicity. Noteworthy among the numerous attempts made to solve this fascinating but most involved question was one where Manson trained two intelligent young men, Li-kha and Tiong-seng, themselves filarious,

to examine the blood, to count the embryo parasites they found therein, to read the thermometers and barometer, and to record all their observations accurately.

Manson then tried to elucidate whether the periodicity might be dependent upon an intermittent reproduction of the embryos, as suggested by a valuable paper of Dr. W. Wykeham Myers, surgeon to the David Manson Memorial Hospital at Takow since August, 1879(470). Manson's own observations did not support this theory since parturition seemed a "more or less continuous process."

Turning then to the "Intimate Pathology of Filaria Disease," Manson propounded a most ingenuous theory as to why the filariae do not always or even generally give rise to disease: while the living embryos easily pass the lymph channels, the eggs appear unable to do so on account of their dimensions. Since Manson found occasionally such eggs in the lymph—presumably the result of miscarriage—they might be responsible for the plugging up of the channels and the consequent disease.

Manson's short report on the Health of Amoy for the half-year ending March 31, 1882(471) was the last he published. As we shall see he soon afterwards left this scene of his great activities to commence work at Hongkong.

Ningpo. Passing to a scrutiny of the useful work of Dr. McCartee (Ningpo): in 1872 he went with Judge Chen to Japan to repatriate 300 coolies rescued by the Japanese from the Peruvian ship *Maria Luz*, one of the vessels engaged in the nefarious coolie (called small-pig) trade. He was rewarded for this service with a gold medal and a complimentary letter from the Chinese government. Soon afterwards Dr. McCartee accepted a professorship in Natural Science and Law in the *Kasei-Gakko*, *Tokyo* (forerunner of the Imperial University) acting at the same time as Foreign Adviser to the first Chinese Legation in Japan(472).

(470) Observations on *Filaria Sanguinis Hominis* in South Formosa, Customs Med. Rep. No. 21 (1880-81), p. 1.

(471) Ibidem, No. 23 (1881-82), p. 17.

(472) Chinese Recorder, Vol. XIX, p. 372; Thomson, China Med. Miss Jl., 1887, p. 45; Blame, l.c., p. 49.

In 1873 the Rev. S. A. Davenport of the American Presbyterian Mission began medical work at Ningpo but left in the same or next year(473).

The Rev. R. Swallow of the English Methodist Free Church Mission, who came out as a non-medical man in 1874, spent ten years in itineration, wherein he found medicine so manifest an auxiliary that he later studied and graduated in America (1892).

Barchet's Homeopathic Dispensary and Opium Refuge, mentioned in the preceding chapter, seems to have been opened in the year 1878. The smokers who had to pay a fee of \$3 in advance, stayed on an average 3-4 weeks. Half of these were considered permanently cured(474).

Shanghai. Hospital work at Shanghai developed satisfactorily. The trustees of the Shantung Road Hospital—now in charge of Dr. Johnston—leased in 1873 from the London Missionary Society a piece of ground at an annual rental of \$300 for 25 years(475). Here a new building, capable of accommodating 60-70 patients, was erected at a cost of Tls. 5,600 and opened in July, 1874. From an 1877 record it can be gathered that the hospital showed an annual average of 500 in-patients and 12,000 in the dispensary at an expense of Tls. 1,300 a year(476).

The scanty evidence available also recorded good work at the Gützlaff Hospital. The laudable part this establishment took in the vaccination campaign has been discussed already.

An allusion to the surgical activities of the hospital is contained in one of the Customs Medical Reports by Dr. Jamieson, honorary consulting surgeon to the institution(477) where it is said that in 1876, "about a year after Lister's method was perfected," all serious operations were performed under antiseptic precautions. This is the first record we possess of the application of Lister's discovery in China.

In 1866 the Reverends E. H. Thomson, D.D. (afterwards Archdeacon) and H. N. Woo of the American Episcopal Church Mission ventured with a capital fund of \$84 upon another medical undertaking by starting dispensary work in a small building at the corner of Boone Road and Broadway rented at \$5 per month. Most of the

(473) Thomson, Ch. Med. Miss. JI., 1890, p. 231; Chin. Recorder, Vol. VIII, p. 129.

(474) Chin. Recorder, Vol. XVI, p. 238; A Century of Prot. Miss., p. 129.

(475) This lot, later on the site of the Men's Hospital, was bought from the London Mission in 1901 (Hawks Pott, l.c., p. 91).

(476) Chin. Recorder, Vol. VI, p. 235, Vol. VIII, p. 302.

(477) No. 26 (1883), p. 18.

medical duties seem to have been performed initially by the Rev. Woo with the assistance of Dr. Macgowan, then in private practice at Shanghai. Posters were distributed and soon many patients attended. An appeal was made in the local newspapers and Tls. 700 were quickly subscribed with which sum thirteen houses were acquired at a cost of Tls. 10 each and a small hospital erected. An 1877 report said that 19 beds were available; two private practitioners were in charge supervising the work of a Chinese assistant; one student was in training. The average of in-patients was 130 while 15-20,000 treatments were given in the dispensary at a total annual expense of \$1,200. It had been tried for a short time to collect small fees from the patients but this practice proved so unsatisfactory that it was given up again.

In 1880 Dr. H. W. Boone, who had returned to China, took charge of this *Hongkew Hospital*, as it was then called. Its development into the St. Luke's Hospital will be discussed in the next chapter(478).

As soon as the *Religieuses Auxiliatrices* (Catholic Sisters of Mercy) established themselves at Zi-ka-wei in 1869, they began with dispensary work which rapidly increased in scope. Attention to patients was given by trained sisters assisted by Chinese helpers.

In the same year (1869), the foundation stone was laid for a hospital for aged men near the church of Lao-t'ang in the Chinese city of Shanghai(479) which soon opened its doors. A hospice for aged women and general hospitals were added in due course(275).

In 1876 the Rev. L. H. Gulick, M.D., appointed the year before agent of the American Bible Society for China and Japan, arrived in Shanghai. It would seem that he, engrossed in the tasks of his society, did little actual medical work though taking a share in the formation of the Medical Missionary Association. He retired from service in 1890 and died soon afterwards(480).

Foochow. Medical work at Foochow was resumed in January, 1870, when Dr. Dauphin W. Osgood, sent by the American Board of Commissioners for Foreign Missions, arrived. He soon started with a small temporary hospital in the city and opened in autumn of the

(478) Chin. Recorder, Vol. VIII, p. 311; China Med. Jl., 1917, p. 46; Hawks Pott, Lc., p. 92; Directory of the Nat. Med. Assoc. 1930.—Rev. Woo Hung-yu took an active part in the American Civil War. Died in 1924. Uncle of Dr. Yen Fu-ching, President of the National Medical College, Shanghai.

(479) This church had been founded in 1640 by Father Brancati. During the period of persecution it had been confiscated and turned into a temple but was returned to the Catholics in 1861.

(480) China Medical Miss. Jl., 1887, p. 35; A Century of Protestant Missions, p. 579.

same year a dispensary at Ponasang (福保山) in the suburbs. Here a Chinese building was rented in 1872 and the hospital transferred to it while at the same time a new dispensary was opened in the suburb of Ha-pou-ka.

As can be gathered from an 1876 report, the original hospital at Ponasang possessed accommodation for 18 beds. The annual average was 200 for in-patients and 9,000 at the dispensaries, the total expense \$800. Two students were in training, one of whom seems to have been placed in charge soon afterwards for a few months. A gratifying feature was the readiness with which the Chinese contributed to the institution.

In 1878 a new two-storied hospital was erected at Ponasang capable of accommodating 50-60 patients(481). About the same time an opium asylum was opened where numerous patients were treated, the drug being withdrawn at once. Four-fifths of them were considered permanently cured.

Amidst all these activities, Dr. Osgood found time to begin in 1876 the translation of Gray's Anatomy(482).

An important beginning was made in 1874 when Dr. Sigourney L. Trask, a graduate of the Woman's Medical College of New York and the second woman physician sent by the Women's Foreign Missionary Society of the Methodist Episcopal Church, arrived in Foochow. It appears(483) that in 1877 she opened a hospital for women, considered by some as the first institution of its kind in China(484).

Dr. Trask seems to have been joined by other colleagues, information in regard to whom is, however, scanty and even contradictory. In 1877, Miss M. D. Jones of the same mission arrived(485), followed in the next year by Miss J. E. Sparr(486).

In 1877, two free dispensaries were started by the Governor at Foochow under four old-style practitioners. They were much frequented at first but soon lost their popularity and were closed after a few months(487).

Customs Medical Officer Dr. T. Rennie is reported to have opened, with the aid of the foreign community, a dispensary and hospital

(481) An interesting point is that according to the 1878-79 report, a few insane patients were admitted.

(482) Chin. Recorder, Vol. VII, p. 257, VIII, p. 350, IX, X, p. 316; China Med. Miss. Jl., 1889, p. 85, 1897, p. 91.

(483) A Century of Protestant Missions, p. 464.

(484) Chin. Recorder, Vol. XVI, p. 237.

(485) Thomson, China Med. Miss. Jl., 1890, p. 231.

(486) Ibidem and Chin. Recorder, Vol. XVII, p. 16.

(487) Whitney, Ch. Med. Miss. Jl., 1889, p. 85.

for Chinese at Foochow in 1879(488). This institution also does not seem to have lasted long.

Swatow. At Swatow, where Dr. Gauld had started work in 1863, a new two-storied hospital with accommodation for about 50 patients became available in 1866. \$4,000 had been spent for its installation, one tenth of which was donated by Chinese, who also contributed to the running expenses.

Along with the new hospital, dispensaries were opened at Ampow (荖埠) and Tat-hau-pow (達濠埠), 9 miles distant from the city; each one was visited every alternate week. They were kept open until 1872; the dispensary at Tat-hau-pow was again started in 1875.

From the 1867 report it can be gathered that the Swatow hospital was always filled to more than its normal capacity, the average of in-patients being 70-80. A total of 2,538 cases (536 in-patients) was treated. That the number of in-patients was comparatively higher than in other missionary hospitals can be explained by the fact that Swatow was in those days but a small city so that the bulk of the patients came from the out-lying districts and had to be hospitalised to a greater extent than people dwelling near the hospital(489). In after years the number of in-patients often surpassed those attending the clinic(490).

Dr. Gauld bestowed due attention upon the training of Chinese assistants. In a historical sketch published in 1876(491), he spoke of three who "occasionally received regular instruction in anatomy, surgery and medicine."

As soon as the new hospital was opened, the old building was converted into a *leper refuge*(492) and thus remained for over twenty years(493). By 1874 over 100 such patients were cared for(491), chaulmoogra oil being used(494). Besides, numerous opium-smokers were treated with some beneficial results, pills containing camphora and other tonics being distributed to them(492).

In 1870 Dr. Gauld left for England, his place being taken by Dr. Alex. Thomson (English Presbyterian Mission) who had come out in 1869. Dr. Thomson carried on until the beginning of the

(488) Customs Med. Rep. No. 21 (1880-81), p. 56.

(489) Chin. Recorder, Vol. XII, p. 243.

(490) In 1876 e.g. there were 1,565 in-patients and 1,300 in the dispensary (Chin. Recorder, Vol. VIII, p. 350) while the figures for 1880 were 2,403 and 1,346 respectively (489).

(491) Chin. Recorder, Vol. VII, p. 35.

(492) Ibidem, Vol. I, p. 74.

(493) Cousland, China Med. Miss. Jl., 1892, p. 6.

(494) Chin. Recorder, Vol. VI, p. 304.

year 1872 when, needing a change, he went to Shanghai. In April of the same year he was on his way to Swatow, when the steamers *Ava* and *Rona* collided and he was drowned(491). Until Gauld assumed charge again in autumn 1872 the work was efficiently continued by two Chinese assistants. Chinese subscribers took a great interest in the hospital, almost one third of the subscribers for 1873 belonging to the guilds or hong(495).

A new hospital seems to have been erected in 1877(496). It not only had eight wards, each for 10 beds, but also a separate building for *women and paying patients*.

In 1879(497) Dr. Alexander Lyall of the same mission came out and next year took over Gauld's useful work. Returning to England Dr. Gauld took charge of the Mildmay Mission Hospital, Bethnal Green, London(498).

Miss C. H. Daniells, M.D., appointed by the American Baptist Missionary Union in 1878, opened in the following year a small dispensary in Swatow(499).

Peking. Dr. Dudgeon's work at *Peking* was temporarily interrupted towards the end of the year 1867 by a grave illness (apparently typhus) which lasted three months. His place was filled during this time by the Rev. Dr. Collins. Resuming his work at the beginning of 1868 he received much assistance from Dr. Stephen Wootton Bushell, physician to the British Legation from 1868-1899(500). As contrasted with Swatow, the dispensary patients at Peking vastly out-numbered those admitted into hospital. Thus it can be gathered that in 1875, stationary treatment was given to 60 persons only while 10,000 passed through the out-patients departments (two in number). Three Chinese assistants were employed. The expenses were Tls. 365 in all, a portion of which seems to have been contributed by Chinese donors(501).

While the work of the hospital was assiduously continued, an *Opium Refuge* was opened in February, 1878, through the united efforts of the missions then working in Peking. It was housed in a small temple inside Hatamen which had become Dudgeon's property and for which he was paid a small rent by a *Chinese Anti-opium*

(495) Ibidem, Vol. V. p. 232.

(496) Ibidem, Vol. IX (1878).

(497) Ibidem, Vol. XI, p. 158; A Century of Protestant Missions, p. 180.

(498) Thomson, China Med. Miss. Jl., 1890, p. 231; A Century of Protestant Missions, p. 180.

(499) Chin. Recorder, Vol. XVII, p. 236; A Century of Protestant Missions, p. 335.

(500) Chin. Recorder, Vol. I, p. 51, Vol. II, p. 113; China Med. Miss. Jl., 1887, p. 113; Encyclop. Sinica, p. 77.

(501) Chin. Recorder, Vol. VIII, p. 208.

Society. As in Swatow, anti-opium pills were issued to the patients and also sold to smokers desiring to treat themselves. Soon there was such a demand for them that the establishment threatened to lose its charitable character. Drs. Collins and Dudgeon managed, however, in time to get better control of the refuge. It can be seen that in 1878, 78 smokers were admitted with an average stay of 28 days. In 1879, 68 persons were sheltered (average $1\frac{1}{2}$ months) while 385 were treated outside(502).

As far as can be judged from rather incomplete information, Dr. A. O. Treat, who came to China in 1867 under the American Board of Commissioners for Foreign Missions, spent the first years of his activity at the Peking station(503). His further career will be dealt with soon.

Peking, where the first western medical pioneers to China had worked, was also the seat of activity of the first foreign woman physician sent to the country. This was Dr. Lucinda Combs who had graduated from the Woman's Medical College of Philadelphia and—commissioned by the American Methodist Episcopal Mission—arrived in 1873. In the year 1875 she opened a dispensary(504) and, at the same time(505) or soon afterwards, a hospital for *women and children*. It is certain that by 1877 a hospital of 35 beds already existed(504).

Dr. Combs left Peking in 1877, being succeeded by Miss L. A. Howard of her mission who after two years was transferred to Tientsin(506). The work of the Methodist Episcopal Mission at Peking thus came to a temporary standstill.

The Catholics founded in 1874 the *Nan-tang* Hospital and Dispensary at Peking which continued to exist until 1900. Situated in *Sun Chih Men Nei* its doors were opened to Chinese and foreigners alike. Medical supervision was in the hands of the surgeons to the French Legation, among whom Drs. Mirabelle and Depasse (Navy Medical Service), Detheve and Matignon (Colonial Medical Service) deserve mention(507).

(502) Ibidem, Vol. XI, p. 196.

(503) China Med. Miss. Jl., 1887, p. 113.—The "Century of Protestant Missions" (p. 272) says that Treat was for a year or more at Tungchow, fifteen miles west of Peking, but fails to add, when this was the case.

(504) Chin. Recorder, Vol. VIII, p. 213.—The dispensary had 315 patients in 1875, the expenses being \$200.

(505) A Century of Protestant Missions, pp. 457, 464.—Cormack (China Med. Jl., 1926, p. 523) states that Dr. Combs "carried on the work for two years in a room near the gate-house fitted up as a dispensary and there did her first year's medical duty, Mrs. Geo. Davis Sr. acting as interpreter."

(506) China Med. Miss. Jl., 1887, p. 113.

(507) Bussière, Nat. Med. Jl., 1928, p. 16.

Record must finally be taken of the arrival of Dr. B. C. Atterbury in 1879. He ran at first a dispensary in connection with the chapel of his Mission, the American Presbyterians (North) (503).

Tengchow. Work at *Tengchow* was undertaken for short periods by two doctors of the American Presbyterian Mission, G.D. Patterson (Spring-November, 1871) and S. F. Bliss (June, 1873-June, 1874). Miss A. D. H. Kelsey of the same mission—reported to have come out in the year 1878—seems also to have carried on for a few years only, afterwards going to Japan (508).

Chefoo. In the neighbouring *Chefoo* Dr. J. Brown of the English Baptist Mission started medical activities in 1871 but left after about three years owing to differences with his committee at home. He gave some training to six medical students and also seems to have translated a work on the practice of medicine. After his departure (? 1875) a dispensary was kept open with the aid of the Chinese assistants, the patients of which were expected to pay a small fee. An 1877 report (508) tells of an attendance of 2,869 and an annual expenditure of \$180.

W. A. Henderson, L.R.C.S., of the United Presbyterian Mission, Scotland, arrived in *Chefoo* in 1871 and soon installed two dispensaries as well as a hospital with 25 beds. Out-patients numbered in 1877 (508) 5,899; \$196 were spent.

The Rev. H. A. Randle came to *Chefoo* in the year 1876 as a representative of the *China Inland Mission* founded by Dr. J. H. Taylor in 1865. Since he did not graduate in medicine before 1888 (485), presumably he did not do much medical work at first. However, his mission established in 1879 a *sanitarium* at *Chefoo* (509) where probably dispensary work for the Chinese was also undertaken (510).

Quite remarkable was the fact that in the year 1873 Customs Medical Officers Carmichael and Myers described the case of a foreign resident's child (aet. 1) where clinical and post mortem findings left no doubt as to the presence of *scarlatina maligna* and which they considered as the first instance of such disease in China. They cautiously added:—

Although China is alleged to have an immunity from scarlatina, this is probably merely an inference from the fact that it has not hitherto been observed. But such negative evidence scarcely justifies us in assuming its non-existence, especially when we consider the few opportunities enjoyed by foreign physicians for a careful study of the disease amongst the native population (511).

(508) Chin. Recorder, Vol. VIII, p. 380; Thomson, China Med. Miss. Jl., 1890, p. 231.

(509) A Century of Protestant Missions, p. 141.

(510) China Med. Miss. Jl., 1898, p. 165.

(511) Customs Medical Reports No. 7 (1873-74), pp. 19-20.

It is certainly to the credit of the two authors that they refrained from drawing too far-going conclusions from their limited experience. Nevertheless there is much reason in their claim that the scarlatina case seen by them was one of the earliest ever observed in China. Though for years we have used every available opportunity to obtain evidence as to the early existence of the disease we found but two claims of this kind:

(a) As mentioned in the chapter on vaccination, Dr. Pearson alluded in his 1821 report to a scarlet fever epidemic in Kiangsi Province;

(b) Edkins in an 1895 article(512) referred to a statement published in the Sin-wen newspaper where scarlet fever was in contrast to cholera considered as a new disease in China:

Sha-chi (Sha-tze) is not mentioned by our medical authorities till the Ming dynasty. They at first recommended acupuncture and the moxa only. Sha-chen (a synonymous term for scarlatina) became severely epidemic about a century ago in the reigns of Chien-lung and Chia-ch'ing. It is specially obnoxious in Kiangsu and at Shanghai.

It will be noted that all these alleged early outbreaks were evidently not verified by modern-trained observers. And as to the diagnostic abilities of the old-style practitioners, we have Dudgeon's testimony who wrote in 1875(513) that scarlet fever

is frequently mixed up with measles; in fact nearly all diseases of the rash and pimple variety are generally designated by a combination of the two words chen-tze (疹子) and sha-tze (痧子). The former is the word for measles (rubeola) and the latter that applied correctly to scarlatina.

The alleged outbreak in Kiangsi must be considered with additional mistrust because even later on when the disease was rampant in the North, scarlet fever was rare in the South of China.

Returning to Shanghai, it is significant that the early pioneers, including Lockhart with all his keenness and ability to observe things Chinese, make no mention whatsoever of the early existence of scarlet fever. And even if he and the other modern-trained workers had failed to detect *Chinese* cases, the *foreign* children were bound to catch the infection had it been present among the indigenous population. Nor is it at all likely that cases in the foreign community would have remained unnoticed for any length of time. Thus great importance must be attached to Jamieson's statement(514) that "the first case of scarlet fever ever observed in Shanghai" occurred on October 26, 1873, in the brother of the child dying at Chefoo (case of Carmichael and Myers) who had obviously travelled down while incubating the disease.

(512) China Med. Miss. J., 1895, p. 228.

(513) Customs Med. Rep. No. 9 (1874-75), p. 40.

(514) Ibidem, No. 7 (1873-74), p. 34.

The opinion that scarlatina was a new disease in Shanghai was corroborated later on by Dr. Boone who stated in 1890 (515) that it had not been observed until introduced some eight years ago (?) by a foreign child; since then it was frequent among the Chinese. Dr. Stanley who published in 1917 a profound study on the subject (516) also came to the conclusion that scarlet fever was unknown up to the year 1873 (517). From his carefully compiled statistics it can be seen how the infection gradually became entrenched in Shanghai, leading in some years to quite considerable outbreaks both among foreign and Chinese children.

The belief in a modern origin of scarlet fever in China, which seems first to have been put forward in a tentative form by R. Coltman (518), is well supported by analogous observations made both in Korea and Japan. In regard to the former country it was stated in 1917 by C. Hara that the history of scarlatina there is short, being limited to 20-30 years. Moreover its name (Yang Tawk or "Foreign Poison") is suggestive of introduction from abroad—probably from Japan or China. Dr. Stuart Eldridge maintained in 1878 that in Japan the disease "if not entirely unknown among the natives, is at least exceedingly rare." In both countries we see how gradually this favourable situation changed in much the same way as in China (519).

Chinkiang. Resuming our narrative after this digression into the realm of epidemiology, we have to mention first that Customs Medical Officer A. R. Platt was enabled through the generous aid of a few foreign and Chinese residents to open a dispensary and small hospital for the poor at *Chinkiang* (July, 1876). He met with reasonable success though—"foreign medicine being a decided innovation in Chinkiang"—at first mostly moribund and chronic cases came to hand (520). We could not find any further reference to this establishment which probably closed its doors soon.

Hankow. Next we come to the praiseworthy activities of Dr. F. Porter Smith at Hankow. Having, as we have seen, commenced

(515) China Med. Miss. Jl., 1890, p. 164.

(516) Municipal Health Report for 1917, p. 13.

(517) Dudgeon claimed in a somewhat involved statement (Customs Med. Rep. No. 1—1871—p. 11) to have met with the disease during the 1866 diphtheria epidemic in Peking. In 1875 (518) he still considered it as rare and pointed, as we have seen, to possible sources of diagnostic errors.

(518) In a paper on the "Fevers of China" read at the 1890 meeting of the China Med. Miss. Association and published in the Journal (515) he considered it as possible that the disease, believed by him to be more prevalent in the North of the country than in the South, was introduced by foreigners from England or America.

(519) Japanese Jl. of Bacteriology, 1917, p. 25; Customs Med. Rep. No. 15 (1877-78), p. 51.

(520) Ibidem, No. 12 (1876), p. 26.

dispensary work in the year 1864, he opened in 1866 a small hospital, said to be the first establishment of its kind in Central China (521). An interesting point was that the numerous patients attending the out-patient department(522) were expected to pay a *small fee*(523). Opium addicts seem to have been treated on a limited scale only because Dr. Porter Smith was rather sceptical as to the permanence of the cures effected.

Characteristic of Porter Smith's work were his endeavours to confer boons far beyond the medicines dispensed by him. He prepared simple *tracts on hygiene* and other medical matters which were broadcast with the liberal aid of Customs Commissioner Lord. More important still, he constantly attempted to work hand in hand with the old-style practitioners. In his 1867-68 Report(524) he noted with great satisfaction

an increased interchange of ideas with the native medical faculty, by means of conventions, demonstrations, and mutual presents of books.

Mutual confidence and respect seem to have been established for the doctor continues that

the translation of spurious medical classics by some of the Jesuit missionaries had placed the medical science of China in a somewhat too unfavourable a light

and that

if we could persuade the Chinese practitioners to combine the study of the healthy human body with their own accumulated experience of disease and the effects of the drugs of a by no means scanty native *Materia Medica*, we should achieve much good.

He himself embodied the fruits of his constant intercourse with the Chinese practitioners and druggists and the knowledge gained through exchange of drugs(525) in a book "Contributions towards the *Materia Medica* and Natural History of China for the Use of Medical Missionaries and Native Medical Students"(526) which remained for many years the standard work on the subject(527).

A few months before this treatise appeared in Shanghai(1871) Dr. Porter Smith had left China for England, having handed over in December, 1870, the Hankow establishment and the dispensary existing by then in Wuchang to Dr. E. P. Hardey of the Wesleyan Mission

(521) Balme, l.c., p. 53.

(522) The 1869-70 Report (Chin. Recorder, Vol. III, p. 305) for instance speaks of a total of 6,067, only 93 of whom were admitted.

(523) Chin. Recorder, Vol. III, p. 156.

(524) Ibidem, Vol. I, p. 262.

(525) Ibidem, Vol. III, p. 305.

(526) China Med. Miss. Jl., 1895, p. 47.

(527) As an earlier contribution, the book "Notes on Chinese *Materia Medica*" by Daniel Hanbury, F.L.S., 1862, deserves mention.

(528). The latter continued until 1876 when he was succeeded by A. P. Langley of the same Society(529).

That the London Missionary Society could also commence medical work at Hankow was mainly due to Customs Medical Officer A. G. Reid, through whose good services the sum of £300 was subscribed by the community and a hospital opened in 1866(530). This was in charge of Dr. Reid until the year 1868 when Dr. Geo. Shearer of the mission arrived.

Hanyang and Wuchang. From Shearer's report for the period November, 1868—December, 1869, it can be gathered that, besides the hospital, dispensaries were maintained at Han-yang (漢陽府) and Wuchang (武昌府). The total of patients was 7,037, including a limited number of opium addicts(531). Dr. Shearer carried on until he resigned in 1870 and became Customs Medical Officer at Kiukiang (532). Dr. Reid again volunteered to work and was able to open in June 1874 a proper hospital in Taiping Road. He himself had donated the site worth Tls. 500 while almost Tls. 4,500 were given by local subscribers, both Chinese and foreign(533).

In the next year (1875) the work was taken over by Dr. John Kenneth Mackenzie of the London Missionary Society. This great surgeon, who afterwards did most signal service at Tientsin, was born in the year 1850 at Great Yarmouth and studied medicine in Edinburgh and London, becoming L.R.C.P. and M.R.C.S. He soon became very successful in Hankow, treating in 1877-78, 1,137 in-patients and 11,859 in the dispensary, these figures comprising 700 opium-addicts who showed encouraging results(534).

Mackenzie continued to work at Hankow until 1879 when he was succeeded by the Rev. W. G. Mawbey (London Mission)(529).

Formosa. When concluding the previous chapter, we described how Dr. Maxwell commenced operations in *Formosa*, first at Tainan, but soon retired to the port of Takao where he was joined in 1866 by Dr. Patrick Manson. In the following year a large hospital, accommodating 55 patients was erected at a cost of £300(535). Soon afterwards Maxwell found the time propitious to reopen work at Tainan. The charge of the Takao hospital then devolved upon the

(528) Scarborough, Chin. Recorder, Vol. V, p. 137.

(529) Thomson, Chin. Med. Miss. Jl., 1890, p. 231.

(530) Chin. Recorder, Vol. II, p. 236; A Century of Protestant Missions, pp. 9-10.

(531) Chin. Recorder, Vol. II, p. 318.

(532) Ibidem, Vol. V, p. 137; Thomson, China Med. Miss. Jl., 1890, p. 231.

(533) Scarborough, l.c. (528); Chin. Recorder, Vol. VII, p. 305.

(534) Chin. Recorder, Vol. VIII, p. 359, Vol. IX, p. 244; China Med. Miss Jl., 1888, p. 71.

(535) Maxwell's 1867-68 Report, Chin. Recorder, Vol. II, p. 112.

Customs Medical Officers, first Dr. Patrick Manson, next his brother David and then Dr. Thomas Rennie(536).

Maxwell, resuming work at Tainan (Taiwanfu) in 1868(537), met with successes equalled by few foreigners practising in China. As Dr. W. W. Myers, Rennie's successor at Takao, enthusiastically wrote(538)

go wherever you will (not excluding some savage districts), "Ma I-seng" is spontaneously spoken of and kindly inquired after, while the frequent presence of some one or other who either in the person of himself or his relations, has been treated by Dr. Maxwell, engenders a state of confidence which renders further intercourse easy.

Dr. Maxwell left Formosa at the end of the year 1871. He had a very serious illness after his return to England and—when again coming to China in 1882—was after two years invalided home on account of his health.

His successor in 1871 seems to have been Dr. M. Dickson of the English Presbyterian Mission who presumably handed over charge in 1878 to Dr. Peter Anderson of the same Society(539).

Interesting also was the work instituted in the year 1872 by the Rev. G. L. Mackay of the Presbyterian Church of Canada in Tamsui (淡水 also 滬尾), North Formosa(540). He himself possessed some medical knowledge which stood him in good advantage during his numerous itinerations; his tooth-forceps was specially useful. Moreover he was instrumental in founding a hospital at Tamsui which he conducted with the aid of the Customs Medical Officers in the port. The only medical missionary colleague he had was the Rev. J. B. Frazer, who came out in 1874 or 1875 but remained less than three years when the death of his wife led to his return home(541).

Kiangsu Province. Amongst the new medical undertakings started during the period now under contemplation come first in chronological order the dispensaries founded by Father Seckinger in 1866 in Tan-yang, Chinkiang and Yangchow, *Kiangsu Province*. They were at first under the supervision of Brother Bernard (died 1867) (275).

Kalgan. Some medical work at Kalgan (張家口) seems to have been performed at the time now under consideration by the Reverend

(536) Myers, Customs Med. Reports No. 21 (1880-81), p. 59.

(537) A Century of Protestant Missions, p. 189.

(538) Customs Med. Rep. No. 23 (1881-82), p. 22.

(539) Thomson, l.c. (529) & China Med. Miss. Jl., 1887, p. 45; ibidem, p. 88; Customs Med. Rep., No. 23 (1881-82), pp. 22, 24; A Century of Protestant Missions, pp. 191-192 & personal information from Dr. James L. Maxwell (July 21, 1931).

(540) Chin. Recorder, Vol. VII, p. 127; A Century of Prot. Missions, pp. 232, 240.

(541) Ibidem, p. 232; Thomson, l.c. (529).

John T. Gulick (American Board of Commissioners for Foreign Missions) and the missionaries joining him—all not graduated in medicine. Dr. Treat came to Yuchow (蔚州) south of Kalgan about the year 1870, but left in 1873 for Paotingfu where he continued for a few more years (542).

Tientsin. The beginnings of permanent medical work at *Tientsin* were humble. A dispensary was started towards the end of the year 1868 under the auspices of the London Missionary Society and put in charge of Dr. Dudgeon's senior assistant. It was a success from the start (900 patients being treated during the first two months) which helped, later on, to remove the bitter feelings following the deplorable *Tientsin* trouble previously referred to. Gradually more than one Chinese physician seem to have been employed. Dr. Pai, in charge 1876-77, was seriously ill after having done some fine work early in the great famine of 1877-78; he apparently had typhoid, passing the infection on to his wife who nursed him. While he recovered after three relapses, Mrs. Pai unfortunately died (543).

When Dr. Mackenzie reached *Tientsin* early in 1879 (544), prospects were not at all good, as the dispensary had had a deficit in 1878 and was depleted of drugs with no funds for purchases. A petition was addressed to the Viceroy Li Hung-chang, who probably did not see it, as only a perfunctory acknowledgment was received. A sudden change came, however, when Dr. Mackenzie was invited to the palace together with Customs Medical Officer A. Irwin to attend Lady Li, wife of the Viceroy, who had been given up by the old-style physicians. The treatment prescribed by Mackenzie and Irwin and carried out by Dr. Howard, who—coming from Peking—stayed for one month in the palace, was entirely successful thus enhancing the Viceroy's interest in western medicine (545). The Taiwang Temple near the Yamen was put at Dr. Mackenzie's disposal and the expenses for the dispensary opened were disbursed by the Viceroy (546). At the same time the theatre connected with the memorial temple to Tseng Kuo-fan (曾國藩) was handed over for the same purpose to Dr. Leonora A. Howard; here she treated in the first year of her activity 1,747 patients (547).

(542) Chin. Recorder, Vol. I, p. 178; A Century of Protestant Missions, pp. 280, 284, 286.

(543) Chin. Recorder, Vol. II, p. 113; V. p. 137, VI, p. 47, IX, p. 484.

(544) It is often stated that Mackenzie commenced at *Tientsin* in 1878; we are satisfied, however, that the date given above is the correct one.

(545) Chin. Recorder, Vol. X, p. 393; China Med. Jl., 1920, p. 309; Balme, l.c., p. 57.

(546) Chin. Recorder, Vol. XI, p. 310.

(547) A Century of Protest. Missions, p. 448.

Realising the need for a proper hospital, Li Hung-chang started a subscription for a building fund of \$2,000, most of which sum was collected from Chinese contributors(546). The auspicious development of this undertaking will be discussed in the next chapter.

It would seem that the Rev. Henry D. Porter, M.D. of the American Board Mission stayed at Tientsin from 1872-1880(548) but we could not find any record of medical work performed by him there.

Manchuria. The honour of being the first modern-trained medical worker in *Manchuria* devolved upon Dr. Joseph M. Hunter of the Irish Presbyterian Mission who arrived at Newchwang (牛莊—Yingkow—營口—or Yingtze of the early records) on May 1, 1869, and started at once with dispensary work, carrying on until his death in 1884(549).

Hangchow. Regular medical work at *Hangchow* (杭州) was first commenced by the Catholic Mission who opened in 1869 a small establishment called *Hôpital de St. Vincent*. This was gradually enlarged and a refuge for opium smokers added. In 1901, 400 addicts were treated, while the general hospital had 600-700 patients annually and the dispensary a daily average of 150(550).

In pursuance of the relief work for opium addicts instituted through the sacrifice of a former inspector of the drug factory in India (see Chapter VI), the secretaries of the Church Missionary Society obtained in 1871 the services of Dr. J. Galt of the Edinburgh Medical Missionary Society and instructed him to begin work at Hangchow. Though starting with some medical activities in January 1872, he spent most of the year studying the language. In 1873 he was able to make provision for a refuge by rebuilding a native house. Three wards with 25 beds were available, five being reserved for general hospital work. The establishment was opened at the end of 1873 and up to August, 1874, 160 addicts had been treated, each for a period of 2-3 weeks. The smokers, who had to pay a fee of \$2 as proof of their serious intentions, had to abandon the pipe immediately but were given an "opium-stimulant" which was gradually reduced.

The treatment of out-patients suffering from other diseases, conducted twice weekly, was gratuitous, the more so as some Chinese

(548) *Ibidem*, p. 270.

(549) *Chin. Recorder*, Vol. VIII, p. 215; *A Century of Protest. Miss.* p. 229.

(550) *Customs Decennial Reports*, 2nd Issue, Vol. II, p. 28.—Before that time—early in the year 1867—a dispensary was opened at Hangchow by Dr. Taylor, the great founder of the China Inland Mission. This undertaking—though averaging at times 200 patients daily—could not long continue on account of Dr. Taylor's necessary absences from his base (Guinness, *The Story of the China Inland Mission*, London 1894, pp. 310-311).

free dispensaries existed in the city. A report published in 1876 speaks of about 200 in-patients (both smokers and others) while 4,000 came to the dispensary. One Chinese assistant with some medical training was employed. The total expense was \$600(551).

Ichang. A dispensary distributing Chinese medicines was established in the year 1870 by the Franciscan Fathers at *Ichang* (宜昌府). It may be added that soon a similar institution at Kingchowfu followed while in 1875 the Catholic dispensary at Laohokow opened its doors. Both prepared and issued Chinese medicines to the numerous *baptizeurs* and *baptizeuses* especially (see Chapter II) (552).

Protestant medical work at Ichang was started in 1878 by the Church of Scotland Mission but the physician sent out (name?) withdrew after two years. Presumably some dispensary work was carried on by the Rev. Geo. Cockburn, the missionary pioneer(553).

Wuhu. In the year 1873 the Chinese Life-Saving Association at *Wuhu* (蕪湖縣), which had been founded at an earlier date but had for some time suspended operations, resumed work with medical attendance to the rescued(554). In 1879, when the health of the community was unsatisfactory the Superintendent of Customs instituted at his own expense a free dispensary under two native practitioners where over 3,000 patients were prescribed for and provided with medicines at a cost of more than Tls. 1,000. Conditions improving the establishment was soon closed(555).

Kiukiang. Medical work under the American Methodist Episcopal Mission at *Kiukiang* (九江) seems to have been started in 1874(556) by Miss Letitia Mason, a graduate of the Chicago Medical College, who after successful service was compelled by failing health to return home in 1876. Dr. Mason was apparently joined in 1875 by Dr. W. E. Tarbell of the same mission who also stayed but a short time(529). The same seems to hold true in the case of Miss K. C. Bushnell of the Methodist Episcopal Mission, who came out in 1879(557).

Wuchang. The Rev. A. C. Bunn of the American Episcopal Mission started work at *Wuchang* (武昌府) in 1874. As can be

(551) Moule, Chin. Recorder, Vol. V. p. 256; *ibidem*, Vol. VII, p. 346.

(552) Personal information kindly furnished by the Rev. Fathers Lunter and Checcaci.

(553) China Med. Miss. Jl., 1891, p. 225.

(554) Customs Decennial Reports, 1st Issue, p. 255.

(555) A. S. Deane, Customs Med. Rep. No. 20 (1880), p. 22.

(556) We prefer this date given by Thomson (China Med. Miss. Jl. 1890, p. 231) to the information contained in the Century of Protestant Missions as this work mentions at one place Dr. Mason as coming out in 1873 (p. 440) and at another (p. 465) as commencing in 1875!

(557) See besides Thomson's list (529) Chin. Recorder, Vol. XVII, p. 16.

seen from his 1876 report he was in charge of a dispensary and hospital at the Fu Kai chapel (4,584 out-patients, 31 in-patients) and had begun to give medical instruction to two advanced pupils of the Bishop Boone School. An 1878 record speaks of several students to whom "regular instruction in clinical science" was given. In November of the same year the Elizabeth Bunn Memorial Hospital for *Women and Children* was opened (558).

Shao-hsing. The beginnings of the career of the worthy Rev. A. W. Douthwaite of the China Inland Mission go back to the year 1875. Though not yet having graduated he had studied medicine and qualified as chemist. Thus, after a short stay in Shanghai (1874) he commenced work in 1875 at *Shao-hsing* (紹興) and opened also a station in Kinhwa where he dispensed medicines whenever visiting. In 1876 we find him in *Ku-chao* (also in Chekiang Province) where he opened a more regular free dispensary. Removing in the year 1879 to *Wenchow* (溫州府) he managed to instal a small hospital and opium-refuge. With the aid of Chinese and foreigners he treated in the first year over two hundred smokers. Practically all of them were relieved for the time being but most relapsed afterwards. The work at Wenchow was carried on for three years (559).

Shaowu. Regular medical activities at *Shaowu* (邵武) (Fukien), a station visited three times between the years 1873-75 by Dr. Osgood, was commenced in May, 1877 by Dr. H. T. Whitney of the American Board Mission—at first in a dispensary where all medicines supplied were charged for. In the next year he was able to build a hospital for 30-40 patients which was opened in 1879. It seems to have been mainly devoted to the cure of opium addicts. Dr. Whitney was permanently at the station until the end of the year 1879 (560).

Miscellaneous. Mention must finally be made of the commencement of work at five stations, information about which is scanty and sometimes contradictory:

(1) Miss S. J. Anderson, a medical missionary sent out by the American Presbyterians, is said to have commenced activities at *Tsinanfu* (濟南) in Shantung in 1877, but to have retired in 1878. According to another report, a dispensary in this city was started in 1880 by Dr. Stephen A. Hunter who had arrived the year before (1879). This information is also not substantiated by other available records.

(558) Ibidem, Vol. VIII, p. 195 and Vol. IX.

(559) China Med. Miss. Jl., 1888, p. 157, 1889, p. 14, 1891, p. 5 and 1900, p. 48.

(560) Chin. Recorder, Vol. IX (1878); China Med. Miss. Jl., 1888, p. 121, 1897, p. 91.

(2) Work at *Nanziang* (南翔) in the Shanghai district was started in 1877 or 1878 by the Rev. W. R. Lambuth, a medical member of the Methodist Episcopal Church (South) who carried on until 1881.

(3) Dr. D. Stenhouse of the English Methodist New Connexion Missionary Society began in 1878 in the *Laoling* (樂陵) district of Shantung Province with a hospital at Chuchiachai (朱家寨).

(4) Dr. B. Van S. Taylor of the Church Missionary Society commenced in the same year (1878) in *Fukien* Province (Hok Ching 福清縣).

(5) Dr. E. P. McFarlane of the Presbyterian Mission of Scotland seems to have come to *Yangchow* (揚州府) (Kiangsu) in 1878(561).

Further development of these beginnings will be discussed in due course.

(561) For information on these stations see besides Thomson's list (529) the *Century of Protest. Missions*, pp. 109, 390, 418 & *Encyclop. Sinica*, pp. 20, 583.

CHAPTER VIII

PERIOD 1880—1885

MARKED BY CONSIDERABLE PROGRESS IN MEDICAL EDUCATION

Educational efforts of Dr. Myers in Formosa—Viceroy's Medical School opened by Dr. Mackenzie at Tientsin—Medical school at St. Luke's, Shanghai, under Dr. Boone—Soochow Hospital Medical School—Teaching started at Mukden under Dr. Christie—Medical class instituted by Dr. Duncan Main at Hangchow—Beginning of Dr. Neal's activity at Tengchow—Dr. Kerr continues with translation of textbooks and publishes first Chinese medical journal—Progress of Canton medical school which is attended by Sun Yat-sen—Brief history of this great leader—First Protestant Nurse comes to China—Vast opportunities for proper nursing services in China—First industrial hospital at Tangshan opened—Progress of hospital work at Canton, Amoy and Shanghai—Sanitary Department created and Waterworks completed at Shanghai—Continuation of hospital activities at Foochow, Chefoo, Chinkiang, Hankow, Kalgan, Tientsin and Kiukiang—New medical undertakings.

The short period to be discussed now is characterised by much progress in the field of medical education. Several institutions were created which—like the somewhat earlier undertaking at Canton—may be considered as medical schools or at least as forerunners of such.

The first step was taken by Dr. W. Wykeham Myers, Customs Medical Officer at *Takow* (Takao of the earlier reports) in Formosa. Dr. Myers, who graduated as an M.B., M.Ch., seems to have joined the Service at an early date. Working at first mostly with Dr. J. R. Carmichael at Chefoo, he was afterwards stationed at Wenchow(562). He apparently reached Takow in 1879 for he mentions in his *Filaria* article(470) as having taken charge of the native hospital in August of that year.

(562) See his Report on the Sanitary Condition of Wenchow, Cust. Med. Rep. No. 15 (1877-78), p. 38.

In his report, contained in the same issue of the Customs Medical Reports(563), Dr. Myers gave a short survey of the history of the hospital which was then supported entirely by contributions from local residents—foreigners and Chinese alike. To commemorate Dr. David Manson's connection with it his numerous friends at Takow, Amoy and elsewhere,

determined to erect a memorial to one who had, even during his comparatively short career, made himself beloved and esteemed by all who knew him.

Thus it was decided to erect a suitable building for the hospital. The money was speedily forthcoming and moreover a site at the base of Saracen's Head, one of the most salubrious points in the settlement, was presented by the Chinese Government. Early in 1881 (?) this "David Manson Memorial Hospital" was opened for the reception of both Chinese and foreign patients (18 and 12 beds respectively). Taotai Hu, prevented from presiding at the opening ceremony, had proclamations posted throughout the island, explaining the object of the institution and his full sympathy with it. He also put his name down for Tls. 100 annually—an example followed by other officials and Chinese residents. Dr. Myers notes that

there are but few places where the entente between foreigners and Chinese is more declared than in Formosa. Even the uncivilised aborigines are not above seeking aid, and only the other day we had quite a crowd of these "savages," who had obtained passports for the purpose of testing the powers of western medical skill.

The first allusion to Myers' educational work is contained in his report for 1882(564). Deploring the malpractices of travelling quacks who professed a knowledge of western medical methods, he stressed the great need for duly instructed Chinese. Not satisfied with the mere practical training they might receive while apprenticed in the hospital, he considered

that a knowledge of English, French or German is the first, the easiest, and the most essential step towards the acquirement of professional knowledge.

The best way would certainly be to send selected youths to Europe or America, but since this is practically impossible

the alternative of binding over such persons as might be desirous of instruction for a period of three or four years, teaching them English, and with the aid of models, plates, etc., the other subjects more immediately connected with their future duties, would provide men sufficiently capable, and whose education would guard them against the perpetration of those errors which are almost certain to be committed by anyone less informed.

(563) Ibidem, No. 21 (1880-81), p. 58.—This covers the period of two years ended March 31, 1881.

(564) Ibidem, No. 23 (1881-82), pp. 23-24.

Myers then goes on to state that acting upon these principles he secured in 1880 two "apprentices" who undertook to study 3-4 years. At the time of writing they had obtained a fair knowledge of English, the senior apprentice acting at the same time as hospital assistant. The next step was to be anatomical instruction, Myers being able to obtain from friends at home the £60 necessary for ordering a French anatomical manikin. He concluded that

the principal attraction (for a pupil) lies in the certainty that, when once pronounced fit to start in practice of his own account with the backing I promise to give him should he satisfy such of my professional brethren as I can get together with myself that he is worthy of the trust, he will be able to secure such returns as but few other callings open to him are likely to afford.

The next report(565) contained ample information on the scheme. Myers evidently did not fare well with his two original apprentices, both natives of Formosa. Undaunted by this and other difficulties he managed to obtain in 1883 two promising pupils from the Central School in Hongkong. Their training in anatomy, physiology, elementary chemistry and systematic surgery, as outlined by Myers, was thorough indeed. Two quarterly written examinations were held, and copies of the papers submitted at the second sent to Dr. Jamieson with the request for an unreserved opinion to be published in the Customs Reports. Jamieson expressed himself as follows:—

The answers sent me are on the whole astonishingly good; almost too good, as they suggest the repetition of something learned by rote. But as the plan of teaching adopted must prevent any mere mechanical acquisition of facts unaccompanied by intellectual acquisition of the corresponding ideas, these papers show a very remarkable amount of knowledge.....The average (English) medical student of my time (1856-61) would not have done so well at a written examination.....

In the year 1886 Myers had the satisfaction of announcing the accomplishment of the first stage of his scheme(566):

At the end of May the students, Li Tsun-fan and Chang Chin-kai, presented themselves before a medical board in Hongkong for examination in anatomy, physiology, inorganic chemistry and elementary surgery. After an examination extending over three days, they were declared to have passed "Very creditably."

The board was constituted as follows:— .

Deputy Surgeon-General Hungerford, P.M.O.	President.
Staff-Surgeon Preston, R. N. }Anatomy.
Patrick Manson, M.D., LL.D. }	

(565) Ibidem, No. 28 (1884), pp. 31-39.—This again covered two years up to March 31, 1884.

(566) Ibidem, No. 32 (1886), p. 45 (for the two and a half years ended September 30, 1886).

Colonial Surgeon P.B.C. Ayres	}Surgery.
C. Gerlach, M.D. (German)		
Wm. Young, M.D., C.M., etc.	}Chemistry & Physiology.
Ho Kai, C.M., M.R.C.S. (Chinese)		

Certificates were prested to the candidates by the Acting Governor and some citizens "came forward most handsomely in helping to support the lads during their further course of study." It was proposed to hold the final examination about 17 months later at Shanghai, when the curriculum of four years would be completed.

From a review of a report by Dr. Myers to the Subscribers to the Medical Education Scheme(567), it can be gathered that he provided ingenuously for the training of his pupils in practical obstetrics:

He invited some midwives to attend three lectures per week for 1½ months; these in their turn took the students along to birth cases. It is also noted that one pupil had the opportunity to dissect a human corpse.

In 1888 diplomas were granted to *three* of Myers' pupils after they had passed a final examination in medicine, surgery and obstetrics. Unfortunately they could not obtain suitable posts in China and settled in the Straits Settlements(568). This was perhaps the main reason why the promising work was not carried on.

Admirable as the efforts of Dr. Myers in Formosa were, they are surpassed in importance by the work started in *Tientsin* under Dr. Mackenzie. Here a small hospital, erected with the funds collected under the Viceroy's patronage, was opened in 1880. An opportunity to enlarge the scope of the work came in the next year (1881) when the students sent to America in connection with the China Educational Mission were summarily recalled. These young men had been resident in the United States for seven to ten years, living in American homes and acquiring a general education. They were thus ideally suited for medical training. With the co-operation of Mr. W. N. Petick of the U. S. Consulate, a memorial upon the subject was drawn up and presented to the Viceroy. In it was set forth the desirability of providing trained surgeons for the army and navy, especially in view of the increase in number of foreign-built men-of-war forming the North China Squadron. Dr. Mackenzie

(567) China Med. Miss. Jl., 1889, p. 120.

(568) Customs Decennial Reports, 1st Issue, p. 467; Hume, Addresses, etc., Med. Conference, Peking Union Medical College, September, 1921 (Peking, 1922), p. 74.

therefore offered to undertake the training of eight students for a period of three years in accordance with the American curriculum.

The proposal met with a favourable reply and the school was inaugurated on December 15, 1881 under the title of "Viceroy's Hospital Medical School" (Chinese designation 醫藥館).

From a description of the work by Mackenzie himself(569), it can be gathered that of the eight original students, one left, embarking upon a business career, while a second was transferred to the navy in another capacity. The other six continued the course. Their training was mainly in the hands of Dr. Mackenzie (with exception of a period of eight months when Dr. Atterbury from Peking was in charge), but ready assistance was given by British and American naval surgeons stationed at Tientsin. The engagement of an additional teacher from England was not sanctioned. Examinations were held three times yearly in the presence of Chinese officials by independent medical men, Dr. Frazer and Customs Medical Officer Andrew Irwin taking a prominent part in this.

Though occasional autopsies seem to have been performed, regular dissections were out of question. However, the school was well provided with bones, skeletons and French models. The clinical teaching was conducted at the Viceroy's hospital, the out-patients department maintaining an average daily attendance of 42.

The Viceroy paid so liberally for the instruction of the students that the total running expenses including the school, students' board, lodging and pocket expenses, as well as the hospital, were defrayed from his subsidy(570).

The first class graduated in 1885, diplomas in English and Chinese with the Government seal being issued to the candidates. They were signed on behalf of the school by Customs M. O. Andrew Irwin, Arthur G. Cabell (U. S. Navy), Thomas Edward Henry Williams (Royal Navy) and Dr. Mackenzie. The Viceroy conferred upon the graduates civil instead of military rank, the head of the class, Lin Lien-hui (林聯輝號麗堂), being enrolled in the 9th degree with a crystal button and honorary 5th civil rank, while the others got white buttons and were in the 6th rank. Dr. Lin was permanently appointed to the school and hospital, where he also taught. About 1890, he was appointed first Director of Peiyang Medical College and was also personal physician to Viceroy Li

(569) China Med. Miss. Jl., 1887, p. 100.

(570) Chin. Recorder, Vol. XVI, p. 433.

Hung-chang. Once, the Viceroy was shot in the face by a Korean whilst attending a conference in Korea. The bullet was successfully extracted by Dr. Lin. Unfortunately, this promising career was cut short by typhoid fever to which he succumbed in 1900 at the age of 38.

The second graduate, Dr. Hsu Hua-ching was temporarily attached to the school and later became chief of the Army Medical College. The third was placed under General Chow. Since this commander had an old-style practitioner at his central camp, he decided to hold an examination in order to determine which of the two medical men should be sent to the smaller camp. As was perhaps to be expected, the eloquence of the old-style practitioner so much impressed the examining generals that they sent the newcomer to the distant camp where, however, he could instal himself properly. The fourth graduate was placed on board a cruiser where he remained in service. The two remaining graduates resigned, one because he could only run the dispensary in the Northern camp he was sent to as long as his own medicines lasted but could not obtain fresh supplies(571); the other, after 18 months' service in the navy found better prospects in business. The pay of the graduates in military service was Tls. 30 a month, while an old-style practitioner required only seven, his patients paying for medicine themselves.

A second class of four students from the Hongkong Normal School had been enrolled in 1883 and were awaiting appointment at the time Mackenzie wrote his report (August, 1887). The third class of 1884 comprised not less than 12 pupils from the Hongkong Central School, in order to be prepared for the impending difficulties with France(572). Unfortunately, this larger group was not as proficient in English as the first two batches. For this reason two of the men were transferred to the Telegraph School while the studies of the others had to be prolonged. It seems probable that Mackenzie, towards the end of his career, which was cut short by his untimely death in 1888, was generally disappointed in the results achieved and considered his experiment "ahead of the times." Possibly this was so, but posterity will properly evaluate his praiseworthy efforts in having trained these nineteen graduates(573), and also

(571) Each graduate, upon leaving the school, was presented with a set of instruments and a supply of drugs.

(572) Mackenzie notes that at "about this time, with the consent and kind assistance of His Excellency, he was enabled to arrange a small Ambulance Service for seven surgeons, with a very complete survey of everything necessary, should war come into this quarter. Happily it was not required."

(573) Balme, *China Med. Jl.*, 1926, p. 702.

the far-reaching indirect influence of the undertaking. For Mackenzie's School continued to exist for many years—although under different names and administrations (Peiyang Medical, Naval Medical College) providing for the training of numerous medical men.

From the scanty information available(574), medical education for female students was started by Dr. Howard during the second half of the decade 1880-90. She herself tells (1896) of two medical women, Mrs. Hsu and Mrs. Tsai, trained by her and who continued as her assistants. Though Dr. Howard's undertaking cannot perhaps be considered as a proper school, its importance as one of the first institutions in China where women only were instructed in medicine cannot be overlooked.

Comparatively little is known about the early educational work of Dr. H. W. Boone, who had returned to *Shanghai* in 1879 and soon assumed charge of the newly-founded St. Luke's Hospital. In 1881 (575), he began to teach his assistants—mainly in *Chinese*—with the occasional help of other practitioners in his mission and the community. Presumably, his principal object was to train experienced hospital assistants rather than fully qualified doctors. Different classes were under instruction for 15 years when—as we shall see in due course—the work was reorganised and put on a much higher plane.

Instrumental in the founding of a medical school at *Soochow* (蘇州府) were Drs. Walter R. Lambuth (formerly at Nanziang) and William H. Park of the Methodist Episcopal Church (South). The former apparently went to America in 1881. Returning at the close of the next year he brought with him Dr. Park, a native of Georgia (1858) who had graduated from the Bellevue Hospital, New York (576). Erecting a hospital in 1883, they commenced at the same time educational work in what was first called the Soochow Hospital Medical School(577). From an 1884 report we find(578) that first seven and then eleven pupils were under tuition. The teachers were Rev. A. P. Parker (Chemistry and Physics), Dr. Park (Theory and Practice of Medicine, Diseases of Children, Pharmacy), Dr. Lambuth (Anatomy, Physiology, Surgery and Materia Medica). Lectures were

(574) Gloss, *China Med. Jl.*, 1910, p. 423; *China Med. Miss. Jl.*, 1896, p. 18.

(575) Lincoln, *China Med. Jl.*, 1909, p. 308; McCracken, *ibidem*, 1926, p. 753. An article published in the *Journal* in 1901 (p. 24) claimed that Dr. Boone began in 1880 to teach a few graduates of St. John's College. We can but note this discrepancy as well as that, according to some authorities, Boone returned to Shanghai in 1880 and not in 1879.

(576) Dr. Park's graduation actually took place in 1883, since he had obtained permission to send in his final papers from China (*China Med. Jl.*, 1928, p. 64).

(577) Park, *China Med. Jl.*, 1909, p. 300.

(578) *Chin. Recorder*, Vol. XVI, p. 358.

given in local *Chinese*, but English was also taught. The pupils before entering the school, had to undergo a physical examination and to prove their knowledge of the Chinese classics. When definitely accepted after three months probation, they had to pay a matriculation fee of \$5 and then \$1 for each month's tuition. Books, clothing and food had to be found by them.

Dr. Park evidently left for New York at the end of 1884 to complete his training. His place was taken by Miss Mildred Philips who arrived in the same year and soon began with dispensary work for women and children. Dr. Lambuth went to Peking in 1885 to resume the medical work of his mission left vacant since Dr. Howard's departure(579). He was accompanied by two students of the first class—Ts'ao Yung-kuei, afterwards a prominent practitioner in the capital, and Puo Tsing-chung, first at Peking and later, house-surgeon to the Shantung Road Hospital in Shanghai(580). When Dr. Lambuth was soon afterwards called to Japan, Dr. Ts'ao assumed charge of the work, followed by other practitioners until Dr. Geo. D. Lowry arrived in 1894(579).

After a short interval, during which Miss Philips presumably conducted the work, Dr. Park returned in 1886 and took over the Men's hospital. Both, jointly with Rev. Parker and three Chinese teachers, continued in the school. As heretofore, the lectures which were prepared from English textbooks, were delivered in Chinese(581).

In 1887 Dr. Philips opened a temporary hospital for women and children(582) and about a year afterwards, a permanent one where she was assisted by Mrs. J. P. Campbell and a druggist graduated from the Soochow Medical School(583). Here also teaching was commenced.

The institution of medical education in *Mukden* (奉天府) in 1884 was due to Dr. Dugald Christie, one of the outstanding personalities of the medical missionary world who—commissioned by the United Free Church of Scotland—had come to Manchuria one year earlier(584).

(579) *China Med. Jl.*, 1926, p. 524.

(580) For this and other information about the early students see Park's article (577).

(581) 1886 Report of the Soochow Hosp., *China Med. Miss. Jl.*, 1887, p. 134.

(582) *Ibidem*, p. 73.

(583) *Ibidem*, 1889, p. 80.

(584) We are aware that most reference works speak of Dr. Christie's arrival in 1882. Yet his first report embraced the two years ending June 30, 1885 while he himself wrote (*China Med. Jl.*, 1909, p. 330): "The systematic training of Chinese medical assistants was started in Mukden in 1884, my second year in Manchuria."

Though he met with much opposition at first Christie so won the confidence of the population that he needed assistance urgently. In this connection he wrote in 1909 (585):—

The medical work increased so rapidly that, even at that early stage, I felt that to cope with it single-handed, without the help of trained men, would soon be impossible. My experience then and since has led me to the conclusion that in the Chinese we have the very best material for making physicians, surgeons and medical evangelists, and that their training in medical missionary work means the truest economy as to time, labour and money.

The first class studied—presumably in *Chinese*—for four years, the course covering “the ordinary subjects of the medical curriculum, more importance being attached to the practical than to the theoretical part of their training.” The graduates all continued to work in the hospital so that the growing demands of the work could be met.

After Dr. Christie’s return from furlough in 1891, a second class was enrolled for a more regular and thorough course of five years. Unfortunately this was interrupted by the Sino-Japanese war in 1894. However, when the missionaries were leaving Mukden, several of the students accompanied them to Newchwang, where they rendered good service and gained rich experience in the Red Cross Hospital. In autumn, 1895, teaching was resumed and in due course the students passing the necessary examinations were given diplomas certifying their competence to practice medicine and surgery. Some time afterwards five of them were recognised by the provincial government and received buttons of the fifth rank.

When arrangements were made to begin with a new batch of students, the Boxer Rising stopped all work. Further attempts hereafter were frustrated by the Russo-Japanese war while the building of the new hospital to replace the one burnt in 1900 occupied much time. A training scheme for dressers, in which lecturers from various stations took part, was adopted *pro tempore* until school work could be resumed under normal conditions.

Before discussing the successful introduction of educational work at *Hangchow*, we must note the arrival in 1881 of Dr. D. Duncan Main of the Church Missionary Society, destined, like Dr. Christie, to have a long and most distinguished career in China. Under Dr. Main a new hospital was erected in 1884 and dedicated in May of the year following (586). School work had already begun in 1883, according to Dr. Main (587). A regular class was presumably started

(585) *China Med. Jl.*, 1909, p. 330.

(586) *Chin. Recorder*, Vol. XVII, p. 237; Main, *China Med. Jl.*, 1909, p. 9.

(587) Sturton, *ibidem*, 1926, p. 772.

in 1884(588), the teaching being from the first purely in *Chinese*. Sturton(587), alluding to the early work, said that

during the early days a few students were housed in the out-patient department and went through a four-year course of medical study. This was subsequently(589) lengthened to five years. The old college building was erected in 1893 and was in service until it was demolished in 1923 to make way for the new building. Dr. Main was single-handed for several years, but has been assisted at various times by several well-known colleagues both Chinese and foreign. Among others have been Drs. Hickin (came 1887), Kember, Cole, Evans, Beatty, Babington, Strange, Dansey-Smith, W. Watson and Hiltner.

Another most distinguished medical missionary who taught students at the time now under discussion was Dr. James Boyd Neal of the American Presbyterian Mission, first at *Tengchow* near Chefoo. Born in the year 1855 in Pennsylvania, he graduated from the School of Medicine, Pennsylvania University, in 1883. Coming to China the same year, he first lived at Tengchow in the home of the Rev. Calvin Mateer. The influence of that Chinese scholar was shown in the ardour with which Dr. Neal pursued the study of the language; his proficiency in it may be judged by the translation of medical books (on physiological chemistry, ophthalmology and dermatology) which he carried out during his years in China as well as in the early interest he took in Chinese drugs and the possibility of utilising them for modern hospital work.

Dr. Neal seems to have begun proper medical duties in 1885 when he had a dispensary and some accommodation for in-patients in a Chinese temple. Soon afterwards, he began to train a few pupils. By 1887 he had five students who had bound themselves to study for three years, receiving a subsidy from the mission for food, books, etc. The curriculum was soon lengthened to 3½ (1888) and then four years (1889), the work being constantly pursued until 1890 when Dr. Neal was transferred to Tsinan(590).

While these new institutions were being founded, the educational work at *Canton* was energetically continued. The following volumes were added to Kerr's series of text-books in Chinese:—

1880 Treatise on Eye Diseases

1881 Manual of Operative Surgery
Treatise on Inflammation
Treatise on Fevers

1882 Treatise on Diseases of
Different Organs

This was afterwards united with the
book on Inflammation.

(588) Ibidem, 1913, p. 136.

(589) The curriculum of five years had already been adopted in 1887, when 13 students were in training (*China Med. Jl.*, 1888, p. 184).

(590) *Chin. Recorder*, Vol. XVII, p. 238; *China Med. Miss. Jl.*, 1888, p. 32, 1889, p. 31, 1890, p. 33; *Balme, l.c.*, p. 163; *Nat. Med. Jl.*, 1925, p. 147.

- 1883 Manual of Theory and
Practice of Medicine.

Treatise on Hygiene

Published according to a resolution of
the Missionary Conference of 1877.

- 1884 Manual of Physiology

Translation of Huxley and Youman's
work (591).

In 1880 Kerr published for the first time in the history of modern medicine in China, a small *Chinese medical journal*. This appeared under the title "Western Healing News" in quarterly instalments, but was continued for two years only (592).

Amidst these activities the training of the medical class attached to the Canton Missionary Hospital was not neglected. Among the students attending at that time we find the illustrious name of Sun Yat-sen (593).

A brief history of this great leader, the Father of the Revolution and First President of the Chinese Republic, may not be out of place here. Sun Yat-sen (孫逸仙) or Sun Wen was born of a family of farmers on November 12, 1866 in the village of Tsuiheng (翠亨) in the district of Hsiangshan (香山) now Chungshan between Canton and Macao. On his elder brother Sun Te-chang's (孫德彰) return from Hawaii where the latter had migrated several years ago, the youthful Sun Wen's imagination was immediately fired by the brother's tales of this new world. He wanted to return with Te-chang, but the parents refused permission. However, he eventually got his way and in 1877 at the tender age of 11, he arrived at Honolulu. There he entered the Protestant Episcopal School and made such progress that at the end of the third year he won the first prize in English. He then passed through the St. Louis School on to the St. Louis College of Hawaii, but the elder brother noting the younger's avidity for foreign education, became alarmed and abruptly terminated his studies by sending him back to China. This was about 1883 and Sun Yat-sen returned most unwillingly. Back in the village, he was now more conscious than ever of the blind ignorance that surrounded him, and because of his radical ideas which

- (591) Kerr's books were not the only medical works appearing in Chinese during the period now under discussion. Besides the Anatomy by Osgood, which will be discussed soon, the following deserve mention:—(a) Translation of a book on Internal Medicine by Kao Chi-liang (1881); (b) Exhortations to Abandon Opium Smoking (containing a chapter on the Medical Aspects of the Opium Cure and several prescriptions) by Rev. D. Hill and Dr. Daly, Hankow, 1884.—See Thomson, *China Med. Miss. Jl.*, 1887, p. 115.
- (592) Thomson, l.c. (591); *China Med. Miss. Jl.*, 1888, p. 59. In 1884 a "Medical Journal" (醫學報) began to appear, edited by Dr. D. M. Yin (尹瑞橫). This seems also not to have been continued for long (Information procured by Dr. C. S. Lin).
- (593) *Chin. Recorder*, Vol. XVI, p. 398; *China Med. Jl.*, 1927, p. 295; J. Cantlie and C. S. Jones, "Sun Yat-sen and the Awakening of China."

did not stop at words, he was banished to Canton. From there he went to Hongkong and entered Queen's College. At 18 he was baptised and became a member of the London Missionary Society. But his dreams of reform were rapidly taking shape so he took up the study of medicine, his aim being to prepare for revolution under the cloak of a doctor's activities. He finished his studies at Queen's College, Hongkong and entered in 1886, the Medical School of Canton under Dr. John Kerr. (A photo of the room where Sun lived, now No. 10 Canton Hospital building, is shown). After one year, he returned to the island and entered the Hongkong Medical School, now a part of the present University, being there from 1887-1892. Two of his professors were Dr. James Cantlie and Dr. Patrick Manson. In 1892, he obtained his Licentiate in Medicine and Surgery. He commenced practice in Macao and Yangcheng (羊城) but did so only as a blind—he wanted to start the revolution. In 1892, whilst at Macao, he joined the "Young China Party" (少年中國黨) from which the present-day Kuomintang evolved. About 1897, whilst in Europe, he commenced his trilogy, "San Min Chu I" (三民主義); he was then about 31 years of age.

In the fall of 1905, Sun Yat-sen started the "League of Revolutionary Union" (革命同盟會) in Tokyo and it was there that the future Chinese Republic was first spoken of. But it was not until after many heartbreaking failures that the revolution succeeded through the fall of Wuchang, key to Central China, in October 1911. Dr. Sun, then in the States raising funds for the cause, decided forthwith to return to China. He arrived at Shanghai on Xmas day 1911, was elected First President of the Chinese Republic on December 29 and installed at Nanking on January 1, 1912. He resigned on February 15 after 45 days of office, having accepted the presidency only temporarily and against his wish. Thus he felt that, being freed from political burdens, he could devote his entire time to the work of reconstruction. Yuan Shih-kai succeeded Sun Yat-sen, but trouble soon arose, because the former secretly coveted the Throne and later, had two of Sun's close associates assassinated. And so friendship turned to enmity and when Yuan convoked Parliament for the last time on April 9, 1913, the following message came from Sun Yat-sen: "You have been traitor to your country. Just as I have revolted against the Manchu Emperor, so also I revolt against you." Thus the second revolution broke out but it only lasted two months. Yuan however, emerged more brazen than ever and Sun was forced to seek refuge in Japan. Yuan crowned himself Emperor on December 13, 1915, but owing to growing opposition, fell sick and died after 100 days. Dr. Sun then ordered the provinces to lay down arms, led the navy to Canton, formed a military government there and was

elected Commander-in-chief. In 1918, he returned to Shanghai to devote his time to writing. In 1920, the China Revolutionary Party became the Kuomintang of China and when Canton was recaptured from rebelling factions, Dr. Sun was elected Chairman of the Political Council. In 1921, he was elected President and led an army to subdue Kwangsi, returning to Canton in 1923. The next year, when the First National Congress met at Canton, Dr. Sun lectured on "San Min Chu I" and published the Programme of Reconstruction.

On March 12, 1925, Sun Yat-sen died after operation at the Peking Union Medical College for carcinoma of the liver. His parting words were: "Peace—Struggle—Save China." His body was embalmed, placed in a bronze coffin and buried amid great pomp at the Purple Mountain on June 1, 1929. The huge mausoleum to which a 12 mile macadam road leads from the station is the most impressive sight of the capital.

Dr. Sun Yat-sen's memorable will, the creed of Nationalist China, most fittingly concludes this short chronicle of a great man.

DR. SUN YAT-SEN'S WILL

For forty years I have devoted myself to the cause of the people's revolution with but one end in view, the elevation of China to a position of freedom and equality among the nations. My experiences during these forty years have firmly convinced me that to attain this goal we must bring about a thorough awakening of our own people and ally ourselves in a common struggle with those peoples of the world who treat us on the basis of equality.

The work of the Revolution is not yet done. Let all our comrades follow my "Plans for National Revolution," "Fundamentals of National Reconstruction," "Three Principles of the People," and the "Manifesto" issued by the First National Convention of our Party, and strive on earnestly for their consummation. Above all, our recent declarations in favor of the convocation of a National Convention and the abolition of unequal treaties should be carried into effect with the least possible delay. This is my heartfelt charge to you.

SUN WEN.

Written February 20, 1925.

To continue in the history of the Canton Medical School it may be mentioned that several women were among the students, and in 1884 the hope was expressed that this would lead to the formation of a training class for *nurses*.

At the same time (1884), Miss Elizabeth McKechnie (afterwards Mrs. Thomson) came as the *first Protestant Nurse to China*, as will be shown in the paragraph dealing with progress at Shanghai. She, as well as her early successors, found an enormous and almost untilled field before them. In fact, the splendid achievements of the early medical workers hitherto described are the more remarkable as no provision was made for proper nursing of the patients who were usually restricted to whatever attention their unskilled relatives or

friends could give them. Moreover, when speaking thus far of "hospitals" we have had to choose this designation for lack of another term which would have more exactly described these early institutions. It must be emphasised that these establishments in fact—though most successful in taking care of the sick who were often submitted with splendid results to serious operations—hardly deserved the name of hospitals. When trying to convey to the modern reader an idea of what these early places for accommodating patients were really like, we prefer to quote from Balme's description of them (594):—

Each (courtyard for male and female patients respectively) consisted of a series of one-story rooms arranged in rows or around a central square. These rooms measured approximately eleven feet by ten, but in many cases three or more would be built side by side without partition walls, so as to make a long ward.

The walls were either of porous brick or adobe, and the floors of beaten mud, Chinese "concrete" or brick tiles; whilst the windows, at any rate in the quite early days, were invariably of paper. These windows were seldom made to open effectually, and it must be confessed that neither ventilation nor cleanliness was a marked feature of these old hospitals.

The furniture of the ward was of the scantiest description, and probably consisted of nothing more than a few Chinese beds (wooden or bamboo), a table or two, and some chairs. Everything else was provided by the patient, who brought his own clothes to sleep in, his own bedding to lie on, and his own friends, to nurse and feed him.....

Bathroom (if existing at all) and kitchen were of a similarly primitive description. In the latter

the patient's friends, or the hospital cook, prepared whatever the sick man fancied. It was almost impossible for the medical staff to maintain adequate control over the patient's diet.....

During this period, the first attempts to replace the rough shelters by modern plants were made. The first institution where proper beds and other modestly up-to-date arrangements were provided for the inmates, was evidently the Viceroy's Hospital at Tientsin under Dr. Mackenzie (595), followed by Dr. Duncan Main's Hangchow Hospital (596).

Two other events worthy of special notice were (a) the sending in the year 1884 of an *exhibit from Ningpo* to the International Health Exhibition in London (597); (b) the opening in 1885 of the first industrial hospital in China, the *Colliery Hospital at Tangshan* (唐山—598).

(594) L.c., p. 85 & foll.

(595) Peck, China Med. Miss. Jl., 1887, p. 65.

(596) Ibidem, 1888, p. 184. Here a moderate charge was made to the patients.

(597) Customs Decennial Reports, 1st Issue, p. 350. A catalogue on the Chinese exhibition appeared in 1885, edited by William Clows and Sons.

(598) Ibidem, 3rd Issue, Vol. I, p. 187. Shortly after its beginning the Railway Company joined in the support of the institution. A British doctor with Chinese assistants was presumably employed from the first. It may be added that medical work of the English Methodist New Connexion Missionary Society was established at Tangshan in 1884 (Encyclop. Sinica, p. 583).

Canton. Turning now to a discussion of hospital and allied activities we begin as in previous chapters with *Canton*. The work of the Missionary Society's Hospital there was assiduously continued having the hearty support of both foreign and Chinese subscribers. A noteworthy event of the year 1884 was the amount of donations made by the latter which surpassed that of the foreigners (\$925 as against \$800) (593).

Not only was the accommodation of the hospital increased at a cost of \$5,000 (1882-599), but new workers became available.

The first among these was the Rev. Jos. Clarke Thomson of the American Presbyterian Mission who came to China in 1881 and distinguished himself not only as a medical worker, but especially as a careful compiler of valuable contributions to Chinese medical history. Born in Cincinnati of Scotch stock, he first graduated in theology, then (1881) in medicine from the University and Bellevue Hospital Medical College of New York. He stayed at first in Canton with Dr. Happer and then Kerr and afterwards went (1882) to Lien-chow where he did dispensary work. Taking charge of the Canton Hospital during the absence of Dr. Kerr in 1884-85, he showed such courage and tact during the disturbances of the Franco-Chinese war—especially upon one occasion when a mob attacked the hospital—that he saved and kept the institution open.

It is interesting to add that, at the request of the Viceroy, the hospital sent a surgeon and some helpers to Formosa to care for the wounded soldiers at the military camps. Dr. Luscher, an American surgeon, who seems to have taken part in this work, afterwards visited Peking to propound a scheme for proper navy medical service but obtained no favourable result (600).

During the period under review two women physicians arrived to work in conjunction with the Medical Missionary Society, both appointed by the American Presbyterian Mission (North). One, Miss Mary M. Niles, who arrived in 1882, opened in February, 1885 a dispensary for women and children at Canton and also took charge of the Women's department in the Canton Hospital. The other, Miss M. H. Fulton, who came out in 1884, began in 1885 dispensary work at *Kwaiping* (桂平) (601).

Fatshan. Activities at *Fatshan* were resumed in 1881 with the arrival of the Rev. Charles Wenyon of the Wesleyan Mission, who

(599) Chin. Recorder, Vol. XIV, p. 247.

(600) China Med. Miss. Jl., 1887, p. 129; Report of the Canton Hosp. for 1919, p. 117.—Kerr, in his History of the Canton Hospital (China Med. Miss. Jl., 1896, p. 96) speaks of his absence during the years 1882-84. Our date seems more correct (see Chin. Recorder, Vol. XVI, p. 398 & Thomson's obituary, China Med. Jl., 1927, p. 294).

(601) Chin. Recorder, Vol. XVII, p. 16; Cadbury and Jones, l.c., pp. 130, 145, 152.

opened, in October of the same year, a hospital with five wards for 100 in-patients. Lepers were treated as well as opium smokers, the latter by immediate withdrawal of the drug. The work was so successful that by 1884 the hospital accommodation had been brought up to 150. Dr. Wenyon was joined in the same year by the Rev. R. J. J. Macdonald of his mission while Mr. Anthony Anderson was employed as apothecary. The latter was promoted after a few years to the post of Senior House Surgeon while Chang Ashing held office as his junior.

From 1884, if not earlier, a small entrance fee was demanded from the patients and gradually attempts were made to render the institution self-supporting through collection of fees and sale of medicines—a goal which was reached about the year 1892 when the income of almost \$2,500 more than covered expenses. Poor patients could attend the dispensary free of charge early in the morning, while those attending later in the day had to pay a fee.

Of great interest is the founding in 1885 of a *Chinese Insane Asylum* at Fatshan. Dr. Wenyon, reporting upon this institution six years later, stated that he visited it several times but found no inmates (602).

Amoy. As previously mentioned, Dr. Patrick Manson left *Amoy* in December, 1883, to settle in private practice in Hongkong (603). He thus concluded the second period of his work in China which may be considered as a *productive* one in contrast to the third at Hongkong where he was engaged mainly in *organisation* apart from his private concerns. This phase will be enlarged upon in Chapter IX.

Manson's successor at Amoy was the Rev. Archibald L. Macleish of the English Presbyterian Mission, who arrived in 1881 and took charge early in 1884. He continued on a small scale the training of assistants who had to bind themselves for a period of four years. Macleish was succeeded by Dr. John C. R. Lang of the same mission (604).

The Rev. W. S. Palmer of the London Missionary Society tried in 1883 to commence medical work in the *North River* district near Amoy but, owing to the resistance of the gentry, could only dispense medicines from his residence. He retired in 1886 (605).

Shanghai. Dealing with educational activities, we have stated that the Rev. H. W. Boone of the American Episcopal Mission recom-

(602) *Ibidem*, Vol. XIII, p. 318, Vol. XIV, p. 247, Vol. XVI, p. 157, Vol. XVII, p. 239; *China Med. Miss. Jl.*, 1887, p. 39, 1891, p. 255, 1892, p. 271, 1893, p. 125, 1894, p. 134.

(603) *Manson-Bahr & Alcock, l.c.*, p. 77.

(604) *China Med. Miss. Jl.*, 1887, p. 177 & 1891, p. 117. Dr. Lang, who had arrived in 1885, was in 1887 in temporary charge of Dr. Anderson's hospital in Formosa (*China Med. Miss. Jl.*, 1887, p. 88 and 1888, p. 94).

(605) *Chin. Recorder*, Vol. XVI, p. 225; *Thomson, l.c.* (629).

menced work at *Shanghai* in 1880. A rich Cantonese merchant, Li Chiu-bing, donated a site and with the help of his friends erected a new hospital for Dr. Boone, consisting of two wards with office and operating room, at a total cost of \$10,772. This establishment, opened in 1881, was called St. Luke's Hospital and still continues to exist under that name.

Soon after its opening, a proposal of the trustees of the Gützlaff Hospital to amalgamate their institution with St. Luke's was accepted. Besides a sum of Tls. 4,300 realised from the sale of the Gützlaff Hospital's belongings, the trustees gave to St. Luke's a piece of land on which the present out-patients department stands. It was stipulated that both should be in memory of Mrs. Gützlaff, and that Dr. Jamieson, the merited honorary surgeon of Gützlaff's should join the staff of the new establishment.

This hospital soon became widely appreciated. In 1885, 22,209 patients (among them 315 foreigners) were attended and seven out-stations maintained. In addition to Dr. Jamieson (and apparently other community doctors), Dr. Boone had for a time the assistance of Dr. E. M. Griffith of his mission who came out in 1885 and retired in 1887 (606).

Foremost amongst the three medical women who began to work in Shanghai during the period now under discussion, stands Dr. Elizabeth Reifsnyder of the American Woman's Union Missionary Society (1858-1922). Arriving in 1883, she opened in spring of the next year a small dispensary in the Chinese city which existed for two months only. After a few months, Dr. Reifsnyder, who had been joined by Miss Elizabeth McKechnie, the first *trained nurse* to come to China, resumed dispensary work while sending patients in need of hospital treatment to St. Luke's. Soon, however, with the aid of a bequest of \$7,000 from Mrs. James Williamson (New York) and other contributions amounting to \$5,000, she was able to build a hospital of 20 beds, situated on the road to Zikawei just beyond the West Gate of the Chinese city. This institution, called the Margaret Williamson Hospital, opened its doors in 1885 and soon won universal approbation. Its staff consisted of Dr. Reifsnyder and Head-Nurse McKechnie (607), Miss M. A. Burnett as Superintendent and Dr. Boone as visiting physician, while Dr. Jamieson served on the committee. Bedding and clothing were furnished to in-patients who had to pay for their

(606) Ibidem, Vol. XVI, p. 485; China Med. Miss. Jl., 1890, p. 240, 1893, p. 114, 1901, p. 24; China Med. Jl., 1911, p. 120; Hawks Pott, l.c., p. 92 and personal information from Miss Lamberton (Dr. McCracken).

(607) Married after twelve years' service to Archdeacon E. H. Thomson.

rice. The out-patients had to pay a small entrance fee and to make a deposit for the bottles or jars issued to them (608).

In December, 1883, Dr. Ella F. Swinney of the Seventh Day Baptist Mission arrived. Beginning work soon afterwards, she attended during her first year (1884) 2,713 patients. In 1885 a proper dispensary was started which was also situated near the West Gate (609).

Miss R. McCown of the American Baptist Mission (South) worked at Shanghai but one year (1885-1886) (610).

Appreciable progress was also made in *public health* work. A small *Sanitary Department* to work under the part-time Medical Officer was created in the International Settlement in 1880 (611).

A great step forward was the completion and operation of the Shanghai *Waterworks* in the year 1883. Up to then, the water from wells being mostly unfit for drinking purposes, the Whangpoo River and Soochow Creek had been the principal sources of supply. From there the water was carried into the houses in buckets, poured into large *kongs* or jars, settled by the use of alum and finally boiled for consumption. Proposals to replace this tedious system by proper waterworks had been made at an early date by the Rev. M. T. Yates (pioneer of the Southern Baptist Convention, arriving at Shanghai in 1847), but it was not until 1880 that the Shanghai Municipal Council came to terms with Drysdale, Ringer and Co. to undertake the work (612). As Jamieson recorded (613)

construction began at the filling and pumping station at Yangtzepu in October 1881. Pipelaying had commenced in Hongkew two months earlier, and was finished in February 1882. In the English Settlement the work went on from the latter month to the end of the following April, when it was interrupted. It was resumed in October and finished in January of this year (1883). Pipes were laid in the French Settlement during the three months July, August and September 1882, and on the Bubbling Well Road from February to April, 1883. Water was obtainable at the hydrants and houses in July (614).

The ceremony of turning on the water was attended by Viceroy Li Hung-chang who happened to be in Shanghai (612). Jamieson was quite satisfied with the quality of the water supplied but asserted that it ought to be boiled for drinking purposes.

(608) Chin. Recorder, Vol. XVI, p. 237, Vol. XVII, p. 16; China Med. Miss. Jl., 1888, p. 96; A Century of Protestant Miss., p. 470; China Med. Jl., 1923, p. 953.

(609) Chin. Recorder, Vol. XVI, p. 238, Vol. XVII, p. 16.

(610) Ibidem, Vol. XVII, p. 16; Thomson l.c. (529).

(611) Jordan, China Med. Jl., 1929, p. 339.

(612) Hawks Pott, l.c., p. 109.

(613) Customs Med. Rep. No. 26 (1883), p. 8.

(614) In addition to the above mentioned constructions, a water tower was erected in Kiangse Road (612).

He was less pleased with the attempts to provide "more if not better, *accommodation for small-pox cases* at the General Hospital," considering it unwise

to erect a small-pox hospital in one of the most crowded neighbourhoods of Shanghai, without any surrounding vacant land, and in immediate proximity to the General Hospital, the two institutions being, with certain undescribed precautions, served by the same nursing community (615).

Foochow. We have seen how Dr. Osgood, in addition to his multifarious duties at the hospital and opium asylum at *Foochow*, undertook a translation of Gray's Anatomy (into Wen-li). Early in 1880 when Dr. Henry T. Whitney was transferred from Shaowu to Foochow to relieve Osgood from routine work, the latter's health had already been undermined. It was probably due to this that Dr. Osgood died in August of the same year from the effects of a sunstroke. He was succeeded by Whitney who finished translating the work on anatomy. This appeared for the first time in 1881 in six volumes. The 800 copies printed were nearly sold out by the year 1887 so that Dr. Whitney undertook a revision of the text and brought out a second edition in 1889 (a third, being a new translation from the latest English issue, appeared in 1905).

The work in hospital and asylum was in the meanwhile assiduously carried on. A new dispensary near the Water Gate was opened in 1881. In the following year the sale of medicines was entrusted to Dr. Chang, formerly a promising pupil of the hospital, who in 1884 also took charge of the opium asylum. The attendance at the latter had diminished since 1882 because not less than five similar institutions had been opened at and near Foochow by men formerly connected with the original asylum (616).

Dr. Whitney went on furlough in 1884, leaving the hospital nominally under the Rev. C. C. Baldwin with Dr. T. B. Adams (assisted later on by Dr. T. Rennie) in charge of the medical work. Actually most of it lay in the hands of the Chinese assistants who displayed so much skill in treating soldiers that two of them were awarded military honours.

Returning from the United States in November, 1885, Dr. Whitney remained in charge at Foochow until 1888, excepting a winter (1886-87) spent at Shaowu.

Dr. Trask, whose early work was also discussed in the foregoing chapter, was succeeded after eleven years of faithful service by Miss C. A. Corey who successfully carried on the hospital and dispensary

(615) Customs Med. Rep. No. 26 (1883), p. 5.

(616) A Chinese General dispensary maintained by subscriptions began to function about the same time (China Med. Miss. Jl., 1890, p. 286).

(figures for her first year, ending July 19, 1886, were 3,791 out-patients and 218 admitted) besides training of a small class of female students. The latter, if trustworthy and capable, were paid 2-3 dollars a month but had to find their books, clothes and food.

Another woman physician, Dr. Kate C. Woodhull of the American Board Mission arrived, accompanied by her sister, in December 1884. She attended to women and children (including obstetrical practice) in a Chinese house for the first four years. Some in-patients were admitted from the year 1886. The further activities of Dr. Woodhull, including education of students, will be considered later on (617).

Swatow. The various branches of the work of the English Presbyterian Mission at *Swatow* were successfully continued under Dr. Lyall, who was favourably impressed with results in the cure of opium smokers. He was joined in 1883 by Dr. P. B. Cousland of the same mission (618).

Dr. Daniells, whose arrival has been noted, opened in 1883 two small buildings for women and children, where 22 patients could be accommodated. Two Chinese *nurses* were employed. Unfortunately, an insidious attack of sciatica necessitated the doctor's return home in the year following (1884—619).

Chefoo. The useful work of the Rev. Douthwaite at Wenchow came to an end in 1882 when he removed to *Chefoo*. In 1884 he went on leave to England where he graduated in medicine the year following, returning to *Chefoo* in 1886 (620).

Dr. A. Macdonald Westwater of the United Presbyterian Church of Scotland Mission worked at *Chefoo* from 1881 to 1886 when he was transferred to Manchuria (621).

Chinkiang. Medical work at *Chinkiang* was started in 1884 by Dr. Lucy H. Hoag of the Methodist Episcopal Mission who had originally come to China in 1872 but had returned to the United States to graduate in medicine. She first opened a dispensary in an empty rice go-down rented by her mission but was able after a year to secure better premises where patients could be accommodated. Here she worked most successfully, assisted later on by Dr. Gertrude Taft (came about 1895) and her adopted Chinese daughter who became

(617) Chin. Recorder, Vol. XI, p. 381, Vol. XIII, p. 317, Vol. XVI, p. 238, Vol. XVII, pp. 16, 239, Vol. XVIII, p. 42; China Med. Miss. Jl., 1887, pp. 45, 182, 1889, p. 85, Whitney, *ibidem*, p. 140, 1890, p. 286, Whitney, *ibidem*, 1897, p. 91; A Century of Protest. Miss., pp. 266, 464.

(618) Chin. Recorder, Vol. XIII, p. 239, Vol. XVI, p. 317; Thomson, *l.c.* (529).

(619) Chin. Recorder, Vol. XVII, p. 236.

(620) Customs Med. Rep. No. 24 (1882), p. 18; China Med. Miss. Jl., 1900, p. 48.

(621) China Med. Miss. Jl., 1887, p. 85; A Century of Prot. Miss., pp. 206, 216.

proficient enough to conduct the hospital during one summer when Dr. Hoag was on leave (622).

Hankow. A small hospital with two wards for 10-12 beds each was built by the Roman Catholic Mission at *Hankow* and opened under Customs Med. Off. C. Begg on May 1, 1880. One of the Italian Sisters devoted herself to the work while three youths were trained. The hospital was successful, during the first 11 months caring for 158 in-door cases and 2,834 out-patients, only half of the latter, however, appearing more than once. Quite a number of serious operations were undertaken.

Another interesting event was the opening at about the same time of a Chinese hospital by a former student trained by Dr. Reid, made possible by a donation of Tls. 100 each from 10 mandarins. Three Chinese houses were adapted and foreign medicines procured with the aid of Dr. Begg. A small entrance fee (14 cash) and some charge for medicines were made. Dr. Begg performed the necessary operations as a rule but during his holiday some successful surgical work was done by the Chinese resident medical officer (623).

A long and honourable career was begun when in the year 1882 the Rev. Thos. Gillison took over the work of the London Missionary Society at *Hankow*. He continued treating opium smokers, caring in 1884 for 297, 214 of whom were considered cured. The drug had to be given up at once but chloral hydrate was administered for three days. The smokers had to make an advance payment of 900 cash to be used for their food (624).

Kalgan. Miss V. C. Murdock, M.D., of the American Board Mission arrived in May, 1881, at *Kalgan* where she ran for two years one dispensary in the Upper City, then also a second in the lower part of the settlement. Though hampered by the lack of hospital facilities, she did successful work, including the care of opium addicts. In 1889 she was transferred to Peking but left the next year for the United States. Her successor at *Kalgan*, Dr. F. E. McBride, died of typhus fever after about one year's stay (625).

Tientsin. Dr. Howard, whose educational endeavours at *Tientsin* have been discussed earlier in this chapter, opened on October 15, 1881, the Isabella Fisher Hospital, named in honour of a Baltimore lady who had donated \$5,000 towards its building. The establishment was

(622) Chin. Recorder, Vol. XVII, p. 16; China Med. Miss. Jl., 1888, p. 74; A Century of Prot. Missions, pp. 440, 442, 465.

(623) Customs Med. Rep., No. 21 (1880-81), pp. 45, 47.

(624) Chin. Recorder, Vol. XVI, p. 399; Thomson, l.c. (529).

(625) Chin. Recorder, Vol. XVII, p. 16; China Med. Miss. Jl., 1890, p. 243, 1891, p. 124; A Century of Protestant Miss., p. 286.

capable of accommodating at least 40 patients at an annual expense of \$4,000 which—in contrast to Mackenzie's hospital—was contributed mainly by foreigners.

Dr. Howard continued in charge of the hospital until her marriage to Rev. King in 1884, working part of the time at a dispensary in the city. She was first succeeded by Miss L. E. Akers (later Mrs. Perkins) who had joined her in 1882, then in November, 1885, by Miss A. D. Gloss, M.D.(626).

Kiukiang. As reported by Dr. J. Jardine(627), the Catholic Mission at *Kiukiang*, assisted by Chinese and foreigners alike, opened a small hospital in July, 1880, in the conduct of which he seems to have taken an active part. The majority of patients suffered from malarial fevers or sequelae thereof. A total of 1,420 Chinese (including a number of opium smokers) was treated up to the end of the year and 86 operations were performed. Stimulated by the success of the establishment, the Taotai opened in 1882 a dispensary and vaccination station in the city(628).

From the scanty information available(529), we gather that Miss E. Gilchrist, a medical member of the American Methodist Episcopal Mission, worked at *Kiukiang* for some years beginning from 1881. The same holds true of Dr. W. A. Deas of the American Episcopal Mission, who came to *Wuchang* in the same year(629).

P'angchia-chuang. Among the stations opened during this period, mention may first be made of *P'angchia-chuang* (龐家莊) in Shantung. The reason this village was chosen for missionary work instead of a town was that it had served during the great famine of 1877-78 as headquarters for relief work of the American Board Mission and thus the goodwill of the people had been secured. Dr. Henry D. Porter (since 1872 at Tientsin) was appointed to the station which was formally opened in spring 1880. He was relieved from *medical* duties in 1884 by Dr. A. P. Peck of his Mission, who, from 1880 onwards, had been stationed at Paotingfu. Under Dr. Peck's leadership, the Williams Hospital dedicated to the memory of the missionary pioneer S. Wells Williams, who had bequeathed his Dictionary to the mission, was built(630).

The dispensary at *Paotingfu* (保定府), under Dr. Peck from 1880-84, was taken over in 1885 by Dr. C.P.W. Meritt of the American Board Mission(629).

(626) Chin. Recorder, Vol. XII, p. 392, Vol. XVII, p. 16.

(627) Customs Med. Rep. No. 21 (1880-81), p. 48.

(628) Ibidem, No. 26 (1883), p. 29 (Dr. G. R. Underwood).

(629) Thomson, l.c. (529) & China Med. Miss. J., 1887, p. 35.

(630) China Med. Miss. J., 1887, p. 65, 1892, p. 54; A Century of Prot. Miss., pp. 282-283. The Encyclopaedia Sinica states (p. 17) that in 1915-16 work was transferred from this station to Te-chou (德州).

Taiyuanfu. Work at *Taiyuanfu* (太原府) was started in 1880 by Dr. R. Harold A. Schofield, undoubtedly one of the most brilliant medical men who had ever come to China. Studying at Oxford and London (St. Bartholomew's), he captured all prizes and seemed assured of a most promising career at home. Yet, joining the China Inland Mission he went at his own expense to China to become the first medical missionary in Shansi Province. Sad to relate he succumbed after three years to typhus fever (August, 1883).

Schofield's successor, Dr. E. H. Edwards, who came out in 1882, faithfully continued the work, running not only a hospital but also opening an opium refuge where the addicts were treated with diminishing doses of morphia. Dr. and Mrs. Edwards joined in 1903 the English Baptist Mission which built two new hospitals in place of the one destroyed during the Boxer troubles (631).

Hainan. The first modern-trained medical man in the island of *Hainan* was Dr. E. A. Aldridge, appointed as Customs Medical Officer at Hoihow (海口) on the north coast in 1880. Soon after his arrival, a large number of the poorer classes applied to him for relief and showed no hesitation in taking foreign medicines. The Chinese merchants subscribed money to purchase the necessary drugs (632).

In 1881, Carl C. Jeremiassen of the American Presbyterian Mission (North) began his picturesque activities in the island. His headquarters seem to have been first at Kiungchow (瓊州) later on at Nodoa (那大) (opened 1882). He possessed no regular training, having acquired most of his medical knowledge by following Dr. Kerr around the wards of the Canton Hospital. Nevertheless he practised medicine during his numerous itinerations and, as his collaborator Dr. H. M. McCandliss put it—

it was most remarkable what he could do in a market town in a stay of about four days: Iridectomies and operations for cataract, entropion, harelip, crushing of vesical calculi, splinting of fractures, opening of abscesses, extraction of bullets, and a surprising number of other procedures. He usually carried medicines and instruments in tray baskets, and the shade of a tree or a temple wall was a convenient place to work by.

Mr. Jeremiassen was not only able to win the confidence and gratitude of countless poor patients but also the appreciation of the officials when the soldiers of General Feng, fighting the aborigines, were struck by a fatal fever. As the general wired to the Canton Viceroy, "but for Dr. Jeremiassen he would have had no soldiers left." And—though the different versions of this story vary in details—

(631) Chin. Recorder, Vol. XX, p. 336; China Med. Miss. JI., 1887, p. 175; Thomson, I.C. (529); A Cent. of Prot. Miss., p. 82; Encyclop. Sinica, p. 166; Balme, I.C., p. 54.

(632) Customs Med. Reports No. 21 (1880-81), pp. 73-74.

there seems no doubt that Jeremiassen received considerable aid from the officials to erect hospitals. The first proper establishment was opened at Kiungchow in 1886. This was in charge of Dr. McCandliss who had arrived in 1885 and served with great distinction for about 40 years (—1926,+1931).

The officials and merchants of Hoihow, displeased with the professional attainments of the old-style practitioners, subscribed a large sum of money and converted in June, 1885, the Government school buildings in the city into a hospital. This was conducted on the lines of the Hongkong Tung Wah Hospital, and the services of three men trained in that institution were secured. Advice was given free and medicine supplied to those unable to buy it. Patients were also attended at their homes, the hire of the doctor's chair coolies only being charged. The hospital soon became very popular with an average of 1,100 attendances per month (633).

Chuanchow. Dr. David Grant of the English Presbyterian Mission came in the year 1881 to *Chuanchow* (泉州), some sixty miles N.E. of Amoy. Opening a dispensary and hospital there, he worked with remarkable success until 1894 when he had to retire on account of ill-health. In the course of his career he trained several students one of whom became a successful practitioner at Chuanchow (634).

Nanking. The activities started by the American Presbyterian Mission at the end of 1881 at *Nanking* could not be continued for a long time: Dr. J. E. Stubbart, who had then arrived, left in spring 1883 for Ningpo (whence he retired in the next year) while his successor H. N. Allen was transferred in 1884 to Korea (635).

Permanent work was instituted in the same year (1884) by the Rev. R. C. Beebe who—though offered a lucrative position by Parke, Davis & Co.—had decided to join the American Methodist Episcopal Mission. He began to build a large hospital in the year 1885, the remarkable history of which will be dealt with in due course (636).

Weihhsien. Dr. H. R. Smith of the American Presbyterian Mission came to *Weihhsien* (潍縣) in Shantung Province in 1881 and continued until the year 1883 while his successor Dr. J. M. Mathewson also retired after two years work (1884-86) (529).

Tungchow. To *Tungchow* (通州) near Peking (where probably some earlier work had been done by Dr. Treat—503), came in 1881

(633) Ibidem, No. 31 (1885-86), p. 18 & No. 33 (1886-87), p. 36; Chin. Recorder, Vol. XX, p. 578; China Med. Miss. Jl., 1887, p. 122, 1896, p. 66; A Century of Protest. Miss., pp. 386-387; China Med. Jl., 1925, p. 934, 1931, p. 814.

(634) A Century of Prot. Miss., p. 176; China Med. Jl., 1907, p. 329.

(635) Chin. Recorder, Vol. XVI, p. 428; Thomson, l.c. (529).

(636) Thomson, l.c. (529); A Century of Prot. Missions, p. 442; China Med. Jl., 1928, p. 332.

or 1882 Dr. Marianna A. Holbrook of the American Board Mission. Building in due course (? 1885) a dispensary and hospital, she treated women and children while male patients were sent to Peking (15 miles to the west). Dr. Holbrook retired in 1887, succeeded by Dr. J. H. Ingram of her mission, who enlarged the scope of the work to include men (637).

Hanchung. The medical pioneer at *Hanchung* (Hanchungfu—漢中府) in Shensi Province was Dr. William Wilson of the China Inland Mission who began his work in 1882, at first with a dispensary which was gradually enlarged to a hospital. Numerous opium addicts were cured—if their constitution permitted by immediate withdrawal of the drug; old or weak people received at first a medicine containing gradually diminished doses of opium. Results in this branch as well as in the dispensary and hospital in general were from the onset most encouraging. Great credit is due to Dr. Wilson who, with Dr. Douthwaite, published methods for purifying and utilizing many Chinese drugs, thus considerably cutting down hospital expenses (638).

Wukingfu. Medical work among the *Hakkas* (客家—a tribe speaking a special dialect and who had come many centuries ago from the northern and central provinces to Kwangtung and adjacent parts) was started by the Rev. Dr. W. Riddel of the English Presbyterian Mission. Arriving in China in 1881, he settled in 1883 at *Wukingfu* (五經富—Ng-Kang-phu of the early reports), 60 miles west of Swatow and was joined about the same time by Dr. J. F. McPhun of his mission (629).

A hospital accommodating 20 patients was built in 1884 (which was gradually enlarged to 50-60 beds) and the training of Chinese assistants started. While the hospital work soon passed into the hands of Dr. McPhun, Dr. Riddel continued to practice medicine during his frequent itinerations (639).

Chungking. The Rev. G. B. Crews of the American Methodist Episcopal Mission started dispensary work at *Chungking* (重慶) in Szechwan Province in 1883 (640).

T'aiku. But little information is available about *T'aiku* (太谷縣) in Shansi where work also seems to have been started in 1883 by the Rev. I. J. Atwood, M.D., of the American Board Mission. He afterwards went to *Fenchoufu* (汾州府) some fifty miles distant (1886),

(637) Chin. Recorder, Vol. XVII, p. 16; China Med. Miss. Jl., 1887, p. 181; A Century of Prot. Miss., p. 277.

(638) Thomson, l.c. (529); Balme, l.c., pp. 65, 163.

(639) China Med. Miss. Jl., 1891, p. 214; A Century of Prot. Miss., pp. 188, 474; China Med. Jl., 1911, p. 117.

(640) Thomson, l.c. (529) & A Century of Prot. Miss., p. 445.

being succeeded at T'aiku by Dr. D. E. Osborne who had come out in 1884 (641).

Fuh-ning. Dr. B. Van Someren Taylor (mentioned at the close of the foregoing chapter) was transferred to *Fuh-ning* (Fuhningfu—福甯府) in Fukien Province about the year 1884 where he instituted dispensary and hospital work including the care of opium patients. Pupils were trained (642).

Tsinanfu (643). Mention must be finally made of Dr. Robert J. Coltman, Jr. of the American Presbyterian Mission who opened a dispensary in 1885 at *Tsinanfu*, the capital of Shantung Province (644).

(641) Ibidem, pp. 289, 291-292; China Med. Miss. Jl., 1887, p. 35. According to Thomson's list (529), Dr. Atwood began to work in 1889 at P'ang-chuang, Osborne in 1884 at Jehu (?).

(642) China Med. Miss. Jl., 1887, p. 85.

(643) Earlier but not well substantiated information about this station has been embodied in the concluding paragraphs of the preceding chapter.

(644) China. Med. Miss. Jl., 1888, p. 95 & Thomson's list (529, 629).

CHAPTER IX

PERIOD 1886—1893

EARLY CONSOLIDATION OF MEDICAL EFFORTS

Foundation of Medical Missionary Association—China Medical Missionary Journal—General Meeting of the Association at Shanghai in 1890—Dr. Kerr's endeavours for the Insane—Medical education at Peking—Dr. Patrick Manson's activity at Hongkong—Opening of Alice Memorial Hospital—Hongkong Medical College opened—Manson's inaugural address—Further history of the Hongkong Medical College—Progress of educational work at Foochow, Nanking, Chefoo, Tientsin, Tsinanfu, Soochow, Weihsien, Chungking, Kut'ien, Canton and Swatow—Medical textbooks in Chinese—Training of Chinese nurses at Shanghai, Foochow, Nanking and Canton—General discussion of hospital activities—Payments from patients—Attempts to establish hospital kitchens—Progress of hospital work at Canton, Amoy and Ningpo—Sanitary Board established at Shanghai and Public Health Laboratory started—Hospital activities at Shanghai, Foochow, Swatow, Peking, Tengchow, Chefoo, Hankow, Kalgan, Hangchow, Ichang, Wuhu, Wuchang, Laoling, Taiyuanfu, Nanking, Soochow, Mukden, Chungking and T'aiku—New medical undertakings at Pakhoi and other stations.

In order to grasp the full purport of the events to be described in this chapter, we must again stress the fact that the achievements chronicled up to now were mainly due to the efforts of small groups or individuals rather than to concerted action. We have seen how the Canton Medical Missionary Society exerted its great influence just so long as medical endeavours were restricted to a corner of the Middle Kingdom. As the field expanded, more and more missionary bodies sent medical men to China who—though inspired by the example of the early pioneers and benefiting by their experiences—worked on their own.

During the first half century of medical missionary work, one big convention, accessible to all missionaries and where opinions could be exchanged and policies decided upon, was held. Yet, much as this conference of the year 1877 was appreciated by the participants, it did not lead to a permanent co-ordination of *medical* efforts, such as the formation of an association, election of a committee or found-

ing of a journal. The Customs Medical Reports, though containing valuable contributions, only partially filled this gap, for they consisted of scientific articles only and were not available for discussions of ways and means.

These considerations suffice to show the progress made when a Medical Missionary Association was founded in 1886, its members, in contrast to the old Canton Society, consisting of medical workers only.

The moving spirit in the foundation of the Association was Dr. H. W. Boone (Shanghai) who proposed (645) the formation of such a society with Dr. Kerr as President. A committee composed of Drs. Park, Reifsnnyder, Griffith and Gulick was formed and reported in due course:

(1) Election of the following officers:—

<i>President</i>	Dr. Kerr (646),
<i>Vice Presidents:</i>	
North China Division	Dr. J. K. Mackenzie,
Shanghai Division	Dr. H. W. Boone,
Wuchang & Hankow Division	Dr. W. A. Deas (Wuchang)
Canton Division	Dr. A. Lyall (Swatow)
Fukien & Formosa Division	Dr. H. T. Whitney (Foochow)
<i>Secretary and Treasurer</i>	Dr. E. M. Griffith (Shanghai)
<i>Censors:</i>	Drs. Atterbury (Peking), Douthwaite (Chefoo), Main (Hangchow), Beebe (Nanking), McLeish (Amoy), Wenyon (Canton).

(2) Issuing a Medical Missionary Journal with Drs. Kerr, Reifsnnyder, Mackenzie and Gulick as editors(647).

At the same time they were entrusted with the task of collecting votes for a delegation to the 9th International Medical Congress to

(645) Chinese Recorder, Vol. XVII (1886), pp. 398, 476.

(646) A complete list of the presidents up to 1929 (when Dr. H. H. Morris, Shanghai, took office) is:—

*J. G. Kerr	1887-1889	*G. A. Stuart	1907-1910
*H. W. Boone	1889-1890	*P. B. Cousland	1910-1913
A. Lyall	1890-1892	D. D. Main	1913-1915
*A. W. Douthwaite ...	1893-1895	W. H. Venable	1915-1917
*B. C. Atterbury	1895-1897	*C. J. Davenport	1917-1920
*H. T. Whitney	1897-1899	*C. F. Johnson	1920-1923
*R. C. Beebe	1899-1901	J. Kirk	1923-1925
*S. R. Hodge	1901-1903	S. Cochran	1925-1926
*J. B. Neal	1903-1905	H. Fowler	1926-1928
D. Christie	1905-1907	A. W. Woo	1928-1929
*Deceased up to 1931.			

(647) Actually the journal was first edited by Drs. Kerr, Mackenzie and Boone with Sidney Gulick as Business Manager.

Editors from 1888-90 were Drs. Lyall, Boone (Managing Ed.), Atterbury, and Hodge with Percy Matthews as Associate. The last mentioned became editor in 1891, supported by the above mentioned (except Dr. Atterbury) and Drs. Douthwaite, Kerr, Lambuth, Macklin, Jos. C. Thomson and Whitney.

be held in September, 1887 at Washington (648). Drs. Peter Parker, H. W. Boone and J. K. Mackenzie were elected to serve.

Thus, it is pleasing to note that the venerable founder of medical missionary work in China not only had the satisfaction of witnessing this great progress, but received once more a token of appreciation and confidence from his successors. Soon after (January 10, 1888), Dr. Parker closed his eyes forever (649).

The objects of the new Association as outlined in the first number of the China Medical Missionary Journal (Article II of the constitution) were:—

- First.* The Promotion of the Science of Medicine amongst the Chinese and Mutual Assistance derived from the varied experiences of Medical Missionaries in this country.
- Second.* The Cultivation and Advancement of Mission Work and of the Science of Medicine in General.
- Third.* The preservation of the character, interest, and honour of the fraternity by maintaining a union and harmony of the regular profession in this country.

Membership was open to graduates of recognised medical colleges possessing proper testimonials from the Mission Body under whose auspices they were labouring, persons of any nationality being eligible. The initiation fee was \$1, the annual subscription \$2.

The list of the original 34 members was as follows:—

A. P. Peck (P'ang-chuang)	P. B. Cousland (Swatow)
Henry D. Porter (P'ang-chuang)	S. A. Hunter (Chefoo)
Marianna Holbrook (Tungchow, Peking)	J. G. Kerr (Canton)
A. W. Douthwaite (Chefoo)	R. C. Beebe (Nanking)
J. C. Thomson (Yeungkong)	John M. Swan (Canton)
John F. McPhun (Swatow)	W. E. Macklin (Nanking)
John C. Stewart (Nay-fwoh Fu)	B. C. Atterbury (Peking)
George B. Crews (Peking)	Geo. A. Stuart (Nanking)
W. R. Lambuth (Peking)	William Riddel (Swatow)
W. A. Deas (Wuchang)	R. Mackenzie (Tientsin)
Mary H. Fulton (Kwaiping)	Jas. B. Neal (Tengchow)
Dugald Christie (Mukden)	J. K. Mackenzie (Tientsin)
V. C. Murdock (Kalgan)	W. H. Park (Soochow)
H. T. Whitney (Foochow)	Rev. L. H. Gulick (Shanghai)
Robert Coltman, Jr. (Tsinanfu)	H. W. Boone (Shanghai)
L. Howard King (Tientsin)	Elizabeth Reifsnnyder (Shanghai)
Mildred Phillips (Soochow)	E. M. Griffith (Shanghai)

The periodical of the Association, "the first medical missionary journal in heathen lands," was first issued—printed by Kelly & Walsh

(648) As originally proposed by Dr. Beebe (Chin. Recorder, Vol. XVII, p. 397).

(649) Ibidem, Vol. XIX, pp. 192 and 231 (Obituary by Thomson); China Med. Miss. J., 1888, p. 31.

—in quarterly instalments under the name of the *China Medical Missionary Journal*. From January 1, 1905, it was published every two months until in 1923 when, with the help of the China Medical Board, it appeared monthly. In May, 1907, its title was changed to the *China Medical Journal*, which amalgamated in January 1932 with the *National Medical Journal* to form the *Chinese Medical Journal*.

The first article in the March issue of 1887 (Vol. I, No. 1) (650) was "The Medical Missionary Association of China—Its Future Work," by Dr. Boone. In it he said:

In the establishment of a Medical Journal we have taken a great step forward. In our Quarterly Journal we have now, for the first time, an organ in which to express ourselves, to report upon our work, and to enable us to gather the constantly increasing mass of observations and experience for the good of our own body and the world in general.

In regard to *hospital work* Boone asked:

Should we have dispensaries for out-patients only or should we also have hospitals where there is a foreign doctor? Should we build hospitals in the cheapest possible manner and be satisfied to have them overcrowded, ill-ventilated, dark and dirty—or should we always have them first class?

Turning then to the subject of *medical education* the question was raised as to whether

it is best to have 20 or 30 isolated teachers, or to found a couple of good schools for the whole empire? Is it best to teach in English or Chinese?

The support of the schools and their curriculum were then discussed. In regard to practical anatomical work, Dr. Boone advocated the use of animals and pointed out that

for actual knowledge of human anatomy we can get wonderful fresh preparations from England. . . . This would obviate the objection that has been made to the teaching from plates and models.

Among subject matters desirable for the journal Dr. Boone enumerated

accurate reports of the Geology, Mineralogy, Flora, Fauna and Food Supplies of every Province in the Empire; the Meteorology, the Physical Geography, the prevailing Diseases and the reasons for their prevalence; finally, reports of dispensary and hospital work.

It will be noted that Dr. Boone, modestly putting forward his suggestions in the form of queries, dealt with two most important aspects: (1) the necessity of making drastic reforms in the *hospital work*; (2) replacing the schools run by one or—at the most—a few teachers by *united undertakings* with their infinitely greater facilities.

The second paper, written by J. Kenneth Mackenzie, dealt with "The Evangelistic Side of a Medical Mission." After some clinical articles, there followed two written in *Chinese*: Rev. Woo's (St. Luke's,

(650) This and the other early issues have become rather rare. Even the China Medical Association does not possess a complete set of its own, the first volumes in their files being permanently lent by St. Luke's Hospital.

Shanghai) "Medical Work as an Aid to Missions" and "The Nature and Use of the Medical Missionary Association and Journal" by the Rev. Y. K. Yen (American Episcopal Mission).

In the section for "Notes and Queries," the institution of *Committees on Medical Terms* in each province was proposed so that notes could be compared and an understanding reached before a general meeting of the Association should be held(651).

Some interesting statistics compiled by Dr. Jos. C. Thomson were added. According to him, up to the year 1887, 150 medical missionaries had come to China, the majority of them from America; 27 were ladies, while 33 held theological as well as medical degrees. A list of medical missionaries present in China in 1887 may be summarised as follows:—

BRITISH:		AMERICAN:	
London Missionary Society (1807)	5	Amer. Board For. Missions (1830)	9
Church Missionary Society (1844)	4	Amer. Baptist Miss. Union (1834)	2
English Baptist Mission (1845)..	2	Amer. Prot. Episcopal Miss. (1835)	3
English Presbyterian Mission (1847)	8	Amer. Presbyt. Miss. North (1838)	12
English Wesleyan Mission (1852)..	4	Method. Episcopal Mission (1847)	8
Methodists New Connexion (1860)	1	Seventh Day Baptists (1847).....	1
China Inland Mission (1866)	6	Amer. Baptist Miss. South (1847)	1
United Presb. Church (Scotland) (1865)	2	Methodist Episcop. Miss. S. (1848)	2
Establ. Church of Scotland (1878)	1	Woman's Union Mission (1859)..	1
		American Bible Society (1876)...	1
		Foreign Christian Miss. Soc. (1886)	1
Total of medical missionaries.....	33	Total of medical missionaries	41(652)

Branch Societies of the China Medical Association were established at *Nanking* and *Shanghai*—the former on September 4, 1886 (653), while the latter held its first meeting on October 23 of the same year. Dr. E. M. Griffith was elected President, Dr. H. W. Boone, Vice-President, Dr. E. Reifsnyder, Secretary and Treasurer(654). A Branch at *Hankow* was founded about three years later(655).

An epochal event was the *first general meeting* of the Association, held in May, 1890 at Shanghai with Dr. Boone as President and the Rev. S. R. Hodge as Secretary.

(651) P. 28.—A general Nomenclature Committee was soon afterwards proposed by Dr. Whitney (p. 143).

(652) A number of medical missionaries enumerated in the list but working in Korea and other countries adjacent to China are not considered in the above summary.

(653) China Med. Miss. Jl., 1887, p. 90, 1901, p. 308.

(654) Chin. Recorder, Vol. XVII, p. 442; China Med. Miss. Jl., 1887, p. 90.—Dr. Tating, a graduate of the Tientsin Medical School, was elected member of the Shanghai Medical Missionary Association in 1889 (China Med. Miss. Jl., 1889, p. 129).

(655) Ibidem, 1901, p. 242.

The presidential address and several other papers dealt with the problem of *medical education*. Dr. Boone again dwelt upon the advantage of united efforts wherever possible, reserving individual teaching for far-off regions. Dr. Neal concurred and advocated a curriculum of four years as a minimum. At the same time he, like Dr. Kerr, expressed himself in favour of teaching in *Chinese*. Dr. Whitney stressed the desirability not only of co-operation but of uniformity in the curriculum as well. He considered that the period of study should vary from three to five years depending upon the teaching force available and the preliminary training and future plans of the students.

Dr. S. A. Hunter read a paper on *Medical Nomenclature*. The Conference decided to entrust the task of creating a uniform and adequate nomenclature to a special committee. This was actually named by the newly-elected president Dr. Lyall, the first result of its labours being published in the form of a *Vocabulary of Diseases* by the chairman, Dr. Kerr, in 1894 as fourth quarterly number of the China Medical Missionary Journal of that year.

Dr. Kerr read a valuable paper on "Medical Missionaries in Relation to the Medical Profession." In it he said:—

Let us glance at the causes of disease, which involve a direct violation of some law of God, resulting not only in physical disease but also in the corruption of man's higher nature, and at those evil habits which in like manner bring on disease with moral degradation. These causes may be stated thus:—

- (1) The Social Evil, or the unlawful indulgence of the sexual passions;
- (2) The habitual use of narcotics and stimulants; the chief of which are opium, alcohol and tobacco.

The meeting recommended that a tract upon the *treatment of the opium habit* be written while the General Missionary Conference, held at the same time, adopted resolutions urging the formation of *anti-opium societies* among missionaries and Chinese Christians and of a permanent committee to promote such schemes (656).

Of practical importance were the papers by Dr. Jos. C. Thomson—"Chinese Materia Medica and its Value to Medical Missionaries" and Douthwaite's "Use of Native Drugs by Medical Missionaries."

R. Coltman dealt with the problem of "Fevers in China" the reading of which article was followed by a discussion dealing especially with the problem of scarlet fever. The question of a *collective investigation of certain diseases* was debated.

(656) A practical step taken in connection with these endeavours was the establishing in 1890 of a unit of the Women's Christian Temperance Union at Chinkiang, followed later on by several branches at Peking (Latourette, l.c., p. 659).

Further resolutions dealt with the foundation of a *library and museum*. Dr. Boone, who had advocated the cause of a museum at an earlier date (657), offered to set aside a room in his hospital for the purpose while the Conference voted a sum of money for its maintenance. The collection grew but slowly. A valuable addition to it was made in 1895 when the specimens prepared by Dr. Jamieson were purchased. In 1900 Dr. Lincoln was made curator of the museum (658).

Before dealing with the deliberations of the 1890 Conference on the problem of *Insanity*, it must be stated, that in 1887 the Canton Medical Missionary Society, urged by Dr. Kerr, had resolved to celebrate its fiftieth anniversary by promoting the idea of an Asylum for the Insane. A provisional committee with Dr. Kerr as chairman was formed. In 1889, however, the Medical Missionary Society withdrew its support of the scheme and recommended the foundation of a separate society. The provisional committee, which had collected but little money, was thus left in abeyance and eventually dissolved.

Dr. Kerr, far from being discouraged by these setbacks, again pleaded for his cherished plan at the 1890 Conference, seconded by Prof. E. P. Thwing of the American Presbyterian Mission who read a paper on "Western Methods with Insane Chinese." The Conference seems to have expressed its approval and Kerr published a leaflet to promote the cause. Yet new difficulties arose. Dr. Wenyon, in a letter to the *China Medical Missionary Journal*, published in 1891, again dished up the specious argument that insanity was less prevalent in China than in Europe and America. He further pointed to the existence of an asylum for the insane at Hongkong and stated that the Chinese establishment at Fatshan had no inmates. Finally he disapproved of a missionary enterprise for the insane as this might cause obloquy. Kerr, answering to these objections in the *Journal*, emphasised the necessity of procuring adequate treatment for the insane and expressed doubt as to the existence of a proper asylum at Hongkong where, according to his information, such cases merely received casual attention in the Tung Wah Hospital.

In 1891 (? 1892) (659) Dr. Kerr bought at *his own expense* a piece of ground, measuring 3 acres, at Ha-fong-tsun, Canton, where—in order to secure the goodwill of the neighbours—a dispensary was started under Dr. Wan Tsun-mo, a member of the Provisional Committee. Unexpected help was received in 1894, when a medical mis-

(657) *China Med. Miss. Jl.*, 1887, p. 70.

(658) *China Med. Miss. Jl.*, 1890, No. 3 (Conference Number), 1891, p. 26, 1895, pp. 79, 281, 1900, p. 69, Cousland, 1905, p. 53; Latourette, l.c., p. 463.

(659) While it is usually stated that Kerr bought a site in 1892, he himself (*China Med. Miss. Jl.*, 1898, p. 177) spoke of the year 1891.

sionary not resident in China entrusted to Kerr a sum of money for medical charity among the Cantonese. With the donor's approval this fund was used for the erection of a building on the site while the contributions handed over by the Provisional Committee and others were sufficient for the building of a second. By 1897 the plant, providing accommodation for 30-40 beds in 24 rooms, was ready and in February, 1898, the first patient was admitted. The further history of the institution, which owed its inception solely to Kerr's initiative and perseverance, will be given later (660).

Turning to the subject of *medical education*, mention must first be made of the activities of Dr. E. T. Pritchard who, sent by the London Missionary Society, arrived at *Peking* in the year 1886. He at once organised a medical class where two of the hospital assistants as well as other students were taught with assistance of Dr. Bushell and a clerical missionary who gave instruction in chemistry and physiology. Dr. Pritchard in writing upon his endeavours to teach Chinese students in their own language said

We shall now feel ourselves responsible for imparting, in addition to a fair knowledge of anatomy, materia medica, surgery and medicine during a five years' course of instruction, which is the least term of study for which students are accepted. We cannot, therefore, over-exaggerate the importance of this part of our work, and we feel that two or three such men as we have described would amply repay us for all the time and care bestowed on our medical teaching.

Besides his own pupils, Dr. Pritchard gave some instruction to the students of the T'ung Wen Kuan (Imperial College): About ten of these attended a special clinic once a week during the term so as to obtain an insight into western medical methods. A course in anatomy was given them by Dr. Dudgeon.

Classes for medical students were also held at Peking by Dr. Atterbury of the American Presbyterian Mission. Still more important is the class of Dr. Crews, conducted since 1888 as one of the four departments of Peking University opened by the Methodists in that year. The Chinese Government was especially impressed by the activities of Dr. Crews, promising to employ all his graduates for the army and navy (661).

Hongkong. We must now recall the removal of Dr. Patrick Manson from Amoy to the British Colony at the end of 1883. Though immersed in extensive private practice he found time for public activities. His first notable achievement was the founding of a new

(660) *China Med. Miss. Jl.*, 1888, p. 36, 1890, pp. 68, 205, Wenyon, 1891, p. 255 (see also *ibidem*, 1893, p. 286), Kerr, 1892, p. 60 and 1898, p. 177, *ibidem*, pp. 216, 223, Selden, 1905, p. 1.

(661) *China Med. Miss. Jl.*, 1887, p. 113, 1889, p. 29; 1892, p. 302; *Encyclop. Sinica*, p. 363; Cormack, *China Med. Jl.*, 1926, p. 528.

Medical Society of which he was made first President. In his inaugural address, delivered at the Society's first meeting on September 3, 1886, he spoke of the tremendous opportunities for scientific work in China, emphasising that such might be undertaken with simple apparatus. He likewise pointed out how sadly the local profession was lacking in a periodical to record and discuss observations and experiences. Another subject touched on in the address was the need of proper facilities for giving medical attention to the large but often neglected class of poor Europeans and Eurasians.

Dr. Manson also took a leading part in the establishment of a *Dairy Farm*, pointing out in a memorandum that—while adequate provision for a proper water supply had been made—milk was scarcer than ever and sold at prices beyond people of limited means.

Manson's great work at Hongkong as the prime mover in the foundation of the Hongkong Medical College, is closely connected with the new hospital which was established for Chinese under the aegis of the London Missionary Society. The necessity for such an establishment had been discussed for years and as a first step, the *Tai-ping-shan Dispensary* had been opened in 1881 by Dr. William Young in collaboration with other public-spirited men. Dr. Young, formerly holding a professorship in Montreal University, had come to Hongkong in 1878 to take over the practice of his brother Richard. Though successful in this, like Dr. Manson he devoted much of his time and energy to charitable undertakings. Thus, together with his great colleague Manson and the renowned Bible translator, John Chalmers of the London Missionary Society (1825-1900), he was principally responsible for the establishment of a hospital for the Chinese, made possible chiefly through the generosity of Dr. (afterwards Sir) Ho Kai. This great benefactor (1859-1914) had been sent to England when twelve years of age and had first qualified in medicine at St. Thomas, London, then studied law and gained admittance to the Bar. Returning to Hongkong, he volunteered to defray the building expense of a new hospital so as to perpetuate in its name the memory of his first wife, a Miss Alice Whitcombe. The London Missionary Society found \$14,000 (almost two-thirds of the amount for the site) while the Hon. E. R. Bebelios contributed \$5,000 for drugs. A fête, held on November 12 and 13, 1886, added \$9,000 to the funds of the institution (662), the foundation stone of which had been laid in June of the same year.

(662) A similar fête was held on December 28 and 29, 1888. While again the financial success was most gratifying, Dr. Kerr (March issue of the *China Med. Miss. J.*, 1889) severely criticised these undertakings as being unworthy of a missionary enterprise because theatrical performances had been given and intoxicating liquors sold.

The *Alice Memorial Hospital* was opened on February 17, 1887, with Drs. Manson (Chairman of the Hospital Committee since autumn, 1886), Young, Wm. Hartigan and Gregory P. Jordan as honorary medical attendants, assisted by a Chinese House Surgeon and a number of dressers. This staff was soon augmented by Dr. (afterwards Sir) James Cantlie who had arrived in June, 1887, to assist Dr. Manson in his practice and relieve him of operative work in the hospitals.

The necessity of training the dressers of the new hospital as well as the unusual educational facilities of the establishment were clearly recognised. On August 30, 1887, a meeting with the Rev. Chalmers in the chair, and at which Drs. Manson, Young, Cantlie, Ho Kai, Jordan, Gerlach and Mr. W. E. Crow were present was held. It was resolved to found a college of medicine for Chinese in Hongkong; Dr. Manson was elected Dean and requested to deliver an inaugural address on behalf of the Senate in the City Hall on October 1.

On the day of the meeting which was presided over by Major-General Cameron, Dr. Manson made a long and memorable speech:

Dwelling first on the need of a hospital for treating the Chinese by modern methods, its successful realisation in the Alice Memorial Hospital and the necessity of training the dressers of the institution, he pointed out that a larger number could now be taught, as in addition to the medical staff, other teachers were available(663).

Though it was proposed to teach in English, it would not be difficult to form a respectable-sized class in Hongkong with its unparalleled educational facilities.

Conceiving that there might be objections to the formation of a medical school in a centre not under Chinese administration, Manson pointed out that most laudable efforts had already been made in such territory. But

"the effort is individual and not organised. Each little school depends on the health, the energy, the caprice, or the life of one man. Its work may, therefore, be interrupted at any moment and the immature results dissipated. I have known in my time one, or two, or perhaps three men who have thus devoted themselves to medical teaching and medical work among the Chinese, and who to me are the noblest types of humanity. Medical Sir Galahads they are. . . ."

Manson pointed out, however, that
"nowadays, to do effective work, even Sir Galahads must fight in disciplined squadrons."

He then once more dwelt upon the advisability of teaching in English, saying that

"translations are not sufficient; they are good in their way and as far as they go, but are miserably insufficient in number and extent. In science,

(663) As can be gathered from another passage, the teaching force of the school was twelve. Among them was Dr. Ho Kai who taught Therapeutics.

current literature is everything; current literature is not translated, only some of the classics which pass rapidly out of date."

For this and other reasons Dr. Manson expressed the hope

"that the present is the opportunity for Hongkong to take up a manifest and long-neglected duty; to become a centre and distributor, not for merchandise only, but also for science. . . . He who gives is blessed as well as he who gets. Hongkong may give science and China may get it, but depend upon it the receiver will not fail to recompense the donor in many ways."

Foremost among the difficulties which might beset the new enterprise, Manson anticipated that of finding proper work for the graduates. While a few would presumably get employment at Hongkong and with the Chinese public services, the majority would be confronted by the arduous task of setting up in private practice:

"Single-handed, each will have to cope with what we in our conceit call native prejudices. They will have to fight, also, the vested interests of the native profession. . . . I can see quite well that many will succumb, and give up their profession for something less arduous and less dangerous and perhaps more lucrative. A few will be faithful. These good men and true will be an ever-increasing army. We will look to them to reform medical practice in China and be the pioneers of science. This is our hope. It is a far-reaching ambition and carries many things with it besides the purely medical."

While deploring the low ebb medical knowledge had reached in China, Manson found equally strong terms to condemn the *style* in which modern truth was presented by the foreigners who usually considered themselves as gods and the Chinese as "a kind of idiots". He continued:—

"Because he is ignorant, call not thy brother a fool. To my way of thinking, if there is any blame in the matter, it lies at our door. For here we have the highest truths, evident as lighthouses to us, and yet we present them so rudely, so unwisely, and in such a clumsy way to the intelligent Chinese that he will have hardly anything to do with them. I trust our students, when they leave us, will bear these things in mind; that they will be careful not to offend their countrymen by swagger and supercilious contempt; that they will bear the knowledge they carry with them humbly, and show themselves wise and good as well as learned. . . ."

Then, while confident that other sciences would follow in the wake of medical truth, Manson fully appreciated the wisdom of the Chinese in adopting innovations gradually. He looked forward to the time when

"wise men will again come from the East and the people who gave us the invention of printing will give yet other useful and peaceful arts; . . . the discoverers of inoculation will add again to the prevention and cure of disease; those hundreds of millions will double the recruiting ground of science and may yet give back to Europe more than they got."

In conclusion Dr. Manson pointed out that, favourably endowed as the new College was in many respects, it lacked proper buildings

and he expressed the hope that some merchant princes would come forward at Hongkong and elsewhere to supply this want.

Through Manson's influence, Viceroy Li Hung-chang was approached by the newly formed Senate to become patron of the College. The Viceroy accepted this honour with thanks. Wishing the undertaking every success he noted with satisfaction

that there are between 20 and 30 students in the College studying Medicine, and considered it most proper that they should also pay attention to the sister subject of Chemistry and understand how to compound and how to analyse, thus ensuring greater accuracy in the diagnosis of disease and the preparation of remedies.

I remark—the letter continued—that your countrymen devote themselves to practical research and base their scientific principles on the results of investigations, thus differing from those who rest content with theories.

The happy results which ever attend the treatment of disease on scientific principles are evidence of the advantage to be derived from the constant study of Anatomy and Chemistry and the consequent illumination of the dark path of knowledge.

There is no doubt that when your admirable project is achieved it will be appreciated and imitated, and that it will, through your students, be a blessing to China. . . .

Shortly after, Manson met the Viceroy: In November, 1887, he was suddenly summoned to Tientsin to attend Li Hung-chang who was reported as dying from cancer of the tongue. Manson himself was down with gout so that he had to be carried on board ship but, on reaching Tientsin, he was able to reassure his patient by diagnosing the malady as a sublingual abscess which was drained and soon cured. On his return the doctor received an autographed letter as well as a photograph from the Viceroy.

The directors of the Tung Wah Hospital, far from resenting the establishment of the Alice Memorial Hospital (which in a way competed with their own), expressed their goodwill with a sum of \$1,000 for purchasing anatomical models as well as other teaching appliances. Welcome though this gift was, the models were not of such paramount importance as in other contemporary Chinese medical schools since dissections were officially permitted in Hongkong and the fullest advantage was taken of this most favorable circumstance.

Dr. Manson stayed at Hongkong until the year 1889 when he returned to London. His place as Dean was taken by Dr. Cantlie who also continued to perform operations in the Alice Memorial Hospital which was taken charge of in the same year (1889) by Dr. John C. Thomson (Edinburgh) of the London Missionary Society. He was ably assisted by Chung King-ue, a pupil of Mackenzie and graduate of the Viceroy's College in Tientsin.

Thus Dr. Manson did not have the satisfaction of witnessing the first graduation ceremony of the Hongkong College of Medicine for Chinese on July 23, 1892. At this ceremony, presided over by Sir William Robinson (Governor of Hongkong), a speech was made by Dr. Cantlie expressing the gratitude owed by the College to the London Missionary Society who had put the Alice Memorial Hospital at its disposal for teaching purposes. Cantlie also dwelt upon the benevolent attitude of Viceroy Li Hung-chang and noted with satisfaction that

within the sacred precincts of the Emperor's palace, European Medicine is welcomed and appreciated in the person of one of the graduates of the College of Medicine in Tientsin.

The diplomas, which conferred on the two successful candidates the degree of L.M.S., H. (Licentiate of Medicine and Surgery, Hongkong) were signed by

Drs. Cantlie, Bell, Carvalho, Chalmers, Ho Kai, Jordan, Requa and Thomson; Messrs. Ford, H. McCallum, Watson, Lecturers; Deputy Insp.-Gen. Turnbull, R.N., Staff-Surgeon Williams, R.N., Surgeon-Major Robins, A.M.S., Surgeon-Captain Stuart, A.M.S., Drs. Hartigan and Marques, Messrs. Crow, Lucas and Neidhardt, Examiners.

That this first graduation at the College was an event of the greatest importance is principally due to the fact that one of the two graduates was Sun Yat-sen who had entered the school in 1887 and had passed the examinations with signal success. Sun Yat-sen shortly afterwards commenced practice in the Portuguese colony of Macao, tempted thither by the fact that Macao was adjacent to the village in which he was born, and because he had many friends in the district. As Cantlie recorded there

in a large, well-built hospital Chinese patients were treated according to native methods. Sun impressed upon the Chinese governors of the hospital the importance and benefits of Western medicine; the future emancipator of China commended himself to these old-world-bred men by his honesty and unselfishness, as he did later to the whole mass of his countrymen. He persuaded them to open the portals of the hospital to admit him with his newly acquired knowledge. With a largeness of mind characteristic of Chinamen, the governors said: "Certainly, we will devote this wing of the hospital to European methods, and the other to Chinese practice, and we will judge the results."

Sun commenced practice, and I encouraged him especially in surgical work. When major operations had to be done, I went on several occasions to Macao to assist him, and there, in the presence of the governors of the hospital, he performed important operations, requiring skill, coolness of judgment and dexterity.

It was a goodly journey to Macao by sea, and took me away a considerable time from my daily routine of work. Why did I go this journey to Macao to help this man? For the reason that others have fought for and died for him, because I loved and respected him. His is a nature that draws men's regard towards him and makes them ready to serve him at the operating table or on the battlefield; an unexplainable influence, a magnetism which prevaleth and finds its expression in attracting men to his side.

It was most fortunate that Sun Yat-sen had thus enlisted the admiration and friendship of Cantlie as he had that of Manson's, because their help was instrumental in securing his release when Sun Yat-sen was kidnapped by the staff of the Chinese Legation in London on October 11, 1896, to be deported back to China. He was able then with the help of the kind-hearted wife of one of the English servants in the Legation to inform Cantlie of his plight. Together with Manson, Cantlie first approached the police, then the Resident Clerk at the Foreign Office—who both disbelieved the story. An attempt of Manson's to see Dr. Sun Yat-sen at the Legation was likewise fruitless. The two doctors were even informed that Sun was to be smuggled out of the Legation during the following night and taken to a ship waiting at the London docks. They hired a cab and posted themselves outside the Legation to guard their friend. The next day Dr. Manson was able to see Lord Salisbury (then Prime Minister and Foreign Secretary) who at once insisted on the captive's immediate release.

The Hongkong Medical College for Chinese, since 1897 under Dr. Francis Clark as Dean, obtained from 1902 onwards an annual government grant of \$2,500 to supplement the income from the students' fees (originally \$200 for the whole course, payable in advance, later on \$120 per annum). In 1907, under the patronage of Sir Matthew Nathan, the name of the school was altered to "Hongkong College of Medicine" to signify that students of nationalities other than Chinese might be admitted. At the same time the College was incorporated by a special ordinance.

As to its accommodation, the College remained for years in the plight deplored of by Manson in 1887. A 1909 report said in this connection:—

The Hongkong College of Medicine has thus far had no visible existence, and has had to use makeshifts to make good its somewhat anomalous circumstances. It has had its headquarters in the Alice Memorial Hospital(664), and the affiliated Nethersole(665) and Ho Miu Ling(666) Hospitals have also been open to students for purposes of clinical instruction; but in addition, the college has borrowed accommodation for special purposes all over the city, e.g. the surgery lectures have been delivered at the Government Civil Hospital, biology has been taught at Queen's College Laboratory, chemistry and physics in the Queen's College Laboratory, public health in the Royal Sanitary Institute's lecture hall, pathology and bacteriology in the Public Mortuary and the Bacteriological Institute, anatomical dissecting at the Public Mortuary; and the Tung Wah Hospital has also been made use of in tutorial classes for the clinical material it affords.

(664) This hospital possessed by 1901 medical, surgical and ophthalmic wards (for male patients only).

(665) Erected by Mr. H. W. Davis and opened September 5, 1898, it was destined for women and children.

(666) Erected by Madam Wu Ting-fang and opened on July 20, 1906.—(An "Alice Memorial Maternity Hospital" had been opened two years earlier—June 7, 1904).

To remedy the situation, the government reserved in 1905 a suitable site on the Tai Ping Shan reclaimed area. Two years later (1907), a Chinese benefactor, Mr. Ng Li-hing, offered \$50,000 to erect college buildings there. The work was about to be commenced when Mr. H. M. Mody, a Parsee gentleman, came forward with the offer of a sum of \$180,000 for the erection of a university at Hongkong, which should incorporate the Medical College. This, combined with Mr. Ng Li-hing's gift, made possible the present Hongkong University, and in 1912, the medical college was actually merged with this institution. To the students who had satisfactorily gone through a five years' course, the degree of M.B., B.S. was awarded, which was recognised by the General Medical Council of Great Britain (667).

Foochow. Considerable progress was made in educational work at *Foochow*. Dr. Kate C. Woodhull, who commenced in 1886 with a temporary hospital (followed between 1889-91 by a proper establishment for 26 beds), at this time formed a class of female students who graduated in 1891. Unfortunately, three of them soon died, including Mrs. Loi Ching-hing who had successfully taken up the work when Dr. Woodhull had left on account of ill-health in 1892. The fourth was in prosperous private practice.

Dr. Woodhull returned to Foochow in 1893, accompanied by Dr. Frances E. Nieberg (who, in 1896, became Mrs. Goddard) and re-opened the hospital which had been closed part of the year on account of the Chinese locum tenens' death. Classwork was also resumed by the two doctors assisted by two Chinese teachers, so that after six years (the curriculum adopted), a second class of four students graduated. At the same time clinical work, including a large obstetrical practice, was assiduously continued (668).

At this period, Dr. Whitney seems to have bestowed more attention upon educational work than before. A report for the sixteen months up to April, 1887, mentioned that a group of students had received instruction and undertaken the dissection of animals, while another published in 1888, spoke of six students and one hospital assistant in

(667) The above information regarding Hongkong was principally culled from the following sources:—China Med. Miss. Jl., 1887, pp. 138, 169, 1888, p. 139, 1891, p. 120, 1892, pp. 210, 214, 1893, p. 216, 1896, p. 161, 1901, p. 297; China Med. Jl., 1909, p. 336; Medicine in China (Report of the Rockefeller Foundation), 1914, p. 40; Cantlie and Jones, Sun Yat-Sen and The Awakening of China; Manson-Bahr and Alcock, l.c., Chapters VI and VII.

N.B.—Dr. John C. Thomson of the Alice Memorial Hospital, the distinguished author of two articles on *Surgery in China* (China Med. Miss. Jl., 1892, p. 219 and 1893, p. 69) ought not to be confused with the medical missionary and historiographer Joseph C. Thomson, working in connection with the Canton Medical Missionary Society.

(668) Whitney, China Med. Miss. Jl., 1889, p. 140; 1892, p. 268, 1894, p. 209, Whitney, 1897, p. 91, 1902, p. 40; A Century of Prot. Miss., pp. 257-258.

training. Dr. Whitney continued to teach, removing to Shaowu in the same year (1888). Dr. H. N. Kinnear who succeeded him at Ponasang (Foochow) early in 1890, also instructed students with the aid of the Rev. G. H. Hubbard (teacher in anatomy and physiology). No standard curriculum was adopted as a period of five years seemed too short in view of the insufficient time available for educational work. The case of each student was treated according to its individual merits (669).

Nanking. Teaching at *Nanking* became possible as soon as the Philander Smith Memorial Hospital was dedicated on May 28, 1886, in the presence of U. S. Minister Denby and other dignitaries. Dr. R. C. Beebe mentioned in his first report (1887-670), that three students received instruction in English and Anatomy. In the second account (671) the formation of a Medical School was announced. At the same time Dr. Beebe published an article in favour of training medical students in *Chinese*, pointing out the obvious advantages of this policy (easy of realisation at Nanking where in contrast to Shanghai, Mandarin is spoken) and the danger that English-trained youths might be tempted to accept non-medical better paid jobs (672).

Soon afterwards it was announced (673) that the hospital school had become the Medical Department of the newly founded *Nanking University* with Dr. Beebe as Dean and teacher in Surgery, Dr. Geo. A. Stuart as lecturer in Theory and Practice of Medicine and Miss Esther H. Butler as instructress in Practical Hygiene and the Care of the Sick.

Students were trained at Nanking by Dr. W. E. Macklin as well who, in an article published in the *China Medical Missionary Journal*, stressed the advantages to be gained in anatomical teaching by dissection of animals (dogs and cats).

Chefoo. Dr. Douthwaite, after his return to *Chefoo* from furlough in 1880, started the training of a class of three. His pupils had to bind themselves to study for three years and for a period of post-graduate work in medical missionary undertakings (674).

(669) *China Med. Miss. Jl.*, 1887, p. 84, 1888, p. 183, 1894, p. 209, 1897, p. 91 (Whitney).

(670) *China Med. Miss. Jl.*, 1887, p. 177.—See also *A Cent. of Prot. Miss.*, p. 442.

(671) *China Med. Miss. Jl.*, 1889, p. 29.—Besides the Rev. Beebe, Drs. Stuart and Hoag are said to have taken part in teaching.

(672) *China Med. Miss. Jl.*, 1889, p. 1.—The problem of the "Advisability or the Reverse, of Endeavouring to Convey Western Medical Knowledge to the Chinese through the Medium of their Own Language" was also made the topic of a symposium published in the *Jl. China Branch Royal Asiatic Society*, Vol. XXI, Nos. 1-2 (see also *China Med. Miss. Jl.*, 1888, p. 28).

(673) *China Med. Miss. Jl.*, 1889, p. 72.—The Century of Prot. Miss. claims that the opening of the Medical Department actually took place in 1890 (p. 443).

(674) Macklin, *China Med. Miss. Jl.*, 1892, p. 2; *ibidem*, 1887, p. 83, 1888, p. 91.

Tientsin. The work at *Tientsin* underwent great changes owing to the deplorable death of Dr. Mackenzie who succumbed on April 1, 1888, to septic pleuro-pneumonia complicated by pericarditis. Dr. S. S. McFarlane (arrived in 1887) had been hurriedly summoned to the bedside of his colleague from Hsiao Chang, but arrived too late.

Mackenzie's place was taken by Dr. Fred C. Roberts of the London Missionary Society who, arriving in China in 1887, went first to Mongolia to work with the missionary, James Gilmour. However, the Viceroy decided to withdraw his pecuniary aid and erect a Government hospital instead which was staffed with the best of Mackenzie's students. The original establishment was bought by the London Missionary Society and remained in charge of Dr. Roberts, who thus summed up the situation in 1891:—

The former labours of Dr. Mackenzie, in connection with the Government Medical School under his charge, have been far from fruitless. Up to the time of his death it seemed to him almost like labour in vain, seeing that the graduates were not successful in obtaining appointments. It is very different now. In close proximity to our own hospital is an imposing building, the Viceroy's Hospital, managed for the most part by three of Mackenzie's former students, and with the prospect, if well conducted, of doing much good in the healing of the sick. In Port Arthur there is a naval and military hospital and dispensary which is much appreciated by the soldiers, and it also is worked by former students. Others again have been appointed to Wei-hai-wei, a naval station. Dr. Chang has been accepted many months ago for the post of house surgeon to the Alice Memorial Hospital, Hong-kong; while last but not least, Dr. Mai (Mark) has been for some time successfully treating the father of the Emperor in Peking.

Dr. Roberts continued at *Tientsin* until his death from influenza in 1894, being succeeded by George Purves Smith (L.M.S.) who had assisted in the work for some years (arrived in 1888).

In 1893 a new building to house the medical school was erected on Taku Road adjoining the Government hospital and Dr. Irwin was asked to supervise the work. At the same time, the school officially became a Government institution, assuming the name of the *Peiyang Medical College*. The first director was Dr. Lin Lien-hui (who died in 1900 and was succeeded by Dr. Shu Kuei-ting (W. T. Watt) until 1912). On the staff were Drs. Kin, Watt and Chow. The last mentioned had studied medicine in the United States and had been for some years a teacher at St. John's College, Shanghai. He was appointed to *Tientsin* to replace Dr. Mai who had fallen ill.

Teaching in the *Peiyang Medical College* was in English, a policy which was continued when the French Government supplied the school with three professors, detached for the purpose from the army and navy. It continued under its original name until 1915 when—taken over by the Ministry of the Navy—it became known as the *Naval Medical College*. Since the Revolution of 1911, this College has under-

gone many vicissitudes, little or no financial support being forthcoming from the Ministry of Navy which finally closed the school in 1932 (675).

It may be added that after Mackenzie's death, Li Hung-chang continued to show his confidence in western medical methods even when his own health came into question. While travelling round the world (1895), he was attended by Dr. George Mark, a Chinese Christian, who had been educated at the Government School in Hongkong and the Tientsin Medical School and who enjoyed the fullest confidence of the Viceroy. In 1889, Dr. H. Mason Perkins, a graduate from the United States (like most dentists of the early days in the treaty ports), was appointed Li Hung-chang's Dental Surgeon-in-Ordinary. It was also significant that at a banquet given in 1892, the Viceroy's son not only drank the health of Dr. Irwin, who had treated his father, but paid a public tribute to western medicine in general (676).

Tsinanfu. Dr. J. B. Neal, who went to *Tsinanfu* in 1890, was at first confronted by many difficulties. A small room in the main street was the only place that could be obtained for a dispensary and "haunted" houses were the only available residences. Soon, however, it became possible to acquire a plot of land in the Eastern suburb. Building operations were started in 1891 and in August of the year following, the McIlvaine Hospital (named in honour of the pioneer missionary) was opened. Until Dr. Neal's return from his first furlough (autumn 1893), it was in charge of Dr. J. L. Van Schoick who later went to Chiningchow.

Neal began with the training of students soon after his arrival in Tsinan. When he went on leave, the pupils were sent to Ichowfu to be taken care of by Dr. C. F. Johnson (American Presbyterian Mission, arrived 1889).

After his return to China, Dr. Neal not only completed the building of the wards for in-patients but also a separate court for housing his pupils. Up to 1902 four classes of twenty students were taught by Dr. Neal who fully realised, however, the shortcomings of the individualistic efforts made by him and other medical missionaries in Shantung. The gradual improvement made will be dealt with in due course (677).

(675) China Med. Miss. Jl., 1888, p. 71, 1893, pp. 218, 220, 290, 1894, p. 165, 1895, p. 254, 1896, p. 76; China Med. Jl., 1910, p. 423, 1918, p. 66; Customs Decennial Rep., 2nd Issue, Vol. II, p. 569; Mrs. Bryson, John Kenneth Mackenzie, p. 376; Latourette, l.c., p. 454; Dr. Faber's Report, (discussed in Chapter XIII); Chin. Med. Jl., 1935, p. 839.

(676) China Med. Miss. Jl., 1889, p. 83, 1892, p. 68, 1897, p. 76.

(677) China Med. Miss. Jl., 1893, p. 47, 1894, p. 162, 1897, p. 191, 1903, p. 77, 1905, p. 20; China Med. Jl., 1909, p. 316; Nation. Med. Jl., 1925, p. 147.

Soochow. A Woman's Hospital School was started at *Soochow* in 1891 and worked side by side with that for men until both were united in the year 1894 under the name of the *Soochow Medical College*. Teaching was partly in Chinese and partly in English. The further activities of this early co-educational undertaking will be discussed later on (678).

Weihsien. Medical education for women only was provided by Dr. Mary Brown, appointed in 1889 by the Presbyterian Board for Foreign Missions to *Weihsien* in Shantung where she worked at first with Dr. Madge Dickson (later Mrs. R. M. Mateer, said to be the first woman doing regular medical work in Shantung) (679).

Though Dr. Brown, who was compelled by ill-health to retire in 1899, could educate a limited number of girls only (starting in the early 'nineties) her results were gratifying. Not only were her pupils capable of acting while she was once on furlough, but three of them finally settled in successful private practice (680).

Chungking. The endeavours of Dr. James H. McCartney were also very remarkable. Coming out in 1890 on behalf of the Methodist Episcopal Mission, he opened a dispensary on March 1, 1891 and in October of the same year, a hospital and opium refuge at *Chungking*. The establishment consisted of several blocks and afforded accommodation for 100 patients, being provided with beds of European pattern, bathrooms and other up-to-date appliances. Due mainly to generous contributions from wealthy Chinese, it soon became self-supporting. Dr. McCartney was first assisted by Dr. H. L. Canright (who went afterwards to Chengtu), later on by Dr. Woolsey.

Conditions were thus favourable for the training of students and several classes (mostly men but also a few girls) were taught. Some of the students did very well. Thus one of them, Dr. Liao, took charge in 1897 of the newly opened branch hospital and dispensary at *Hochew*, a second was put in charge of a foreign drugstore organised in 1898 at *Chungking*, while others itinerated and helped to take care of the several dispensaries connected with the hospital.

This promising work was continued for less than a decade, Dr. McCartney afterwards severing his connection with the Mission and

(678) *China Med. Miss.*, JI., 1904, p. 56; *China Med. JI.*, 1909, p. 300; *Medicine in China* (Report of the Rockefeller Comm.), p. 36.

(679) According to Thomson's list (529) there arrived in 1889 at *Weihsien* not less than five medical missionaries: Miss E. F. Boughton, Miss M. Brown, Miss Madge and Miss Margaret Dickson (?), Dr. W. R. Farries, all belonging to the American Presbyterian Mission!

(680) *China Med. Miss.*, JI., 1898, p. 178, 1901, p. 71.

engaging in private practice at Chungking until his death in 1928 (681).

Kut'ien. Mention must finally be made of the efforts of Dr. James J. Gregory of the American Methodist Episcopal Mission, who opened in 1893 the Wiley General Hospital at *Kut'ien* (古田), near Foochow, and simultaneously started a class of medical students. In his first report he stated that seven young men were admitted after an examination and worked in the hospital while being instructed. The three best received a small honorarium. Dr. Gregory, who was assisted by Nurse Martha L. Casterton, retired in 1894 and died two years later, being succeeded by Dr. J. E. Skinner (682).

Canton. Along with these new endeavours, most of the earlier educational undertakings continued their work. This holds especially true of *Canton* where the number of pupils increased from twenty to over thirty during the decade 1886-96. Several female students were always included, some being supported by the ladies in charge of the Missionary Seminary for Women. The students were expected to pay a nominal fee of \$20 per annum (reduced to \$10 in the case of the poorer ones), and to meet their own expenses unless employed in the dispensary.

The curriculum was three years and the Chinese literary language was exclusively used. Besides Drs. Kerr and Niles (and to some extent Dr. Fulton also) some Chinese teachers who had themselves graduated from the school took part in the class work. Noteworthy among the latter were Dr. Wan Tsun-mo, prominent as an English scholar and translator, and Dr. Leung Kin-cho, who five times weekly held recitations in the various branches while special instruction was given by the other teachers and demonstrations on Saturday.

It can thus be seen that the work at Canton was progressing well. In fact Kerr, in a historical sketch on the Medical Missionary Society Hospital published in 1896, had the satisfaction of stating that a total of about 150 had received instruction. Nevertheless he upheld (1887) "that the time for medical schools of a higher order had come."

Swatow. The educational work instituted at *Swatow* by Dr. Gauld was energetically pursued by his successors. According to the report for 1887, published by Dr. Cousland, seven junior assistants and students were in training while two others, who had studied six and seven years respectively, left the hospital to settle in private

(681) McCartney, Customs Med. Rep. No. 42 (1891), p. 13; China Med. Miss. Jl., 1891, p. 131, 1892, pp. 56, 205, 1893, p. 274, 1896, p. 161, 1898, pp. 59, 64, 166, 1900, p. 56; A Cent. of Prot. Miss., p. 446; China Med. Jl., 1928, p. 334.

(682) China Med. Miss. Jl., 1893, p. 150, 1894, p. 210, 1897, p. 188; A Cent. of Prot. Miss., p. 435.

practice. Dr. Cousland left Swatow in 1888, to open a dispensary at *Chaochowfu* (潮州府) in the district. This was first held in the chapel of the mission but was soon transferred to a dilapidated warehouse. Early plans were made for a proper hospital but they were not realised until 1896; built by Geo. Barbour (Professor of Midwifery, Edinburgh) it was dedicated to the memory of the Rev. W. C. Burns. Dr. Cousland continued to train students at Chaochowfu (683).

Among the *medical works in Chinese* published during the time now under discussion, the contributions of Dr. Dudgeon are outstanding. The first of these was a systematic *Anatomy* (全體通考) in 16 (8 large) volumes, printed and published at the expense of the *Chinese Government* by the T'ung Wen College press, its title-page being written by one of the Chinese Ministers. As Thomson (684) summarised

Vol. I comprised prefaces, table of contents and a history of anatomy culled from the *Encyclopaedia Britannica*. The last two volumes were illustrations (over 600) from wood-cuts by Chinese artists, which formed a complete atlas and could be bought separately. Vols. II and III were osteological—a translation of Holden's work, while the remainder was a transcription of Gray's book.

Soon after followed a *Physiology* (全體功用) being a translation of Morrant's, Baker's and Kirke's work. This was similar in make-up to the *Anatomy* and also illustrated.

Other contributions by Dudgeon enumerated by Thomson in 1887 were:—

Anatomical Atlas	One volume, folio, with numerous coloured plates (see Chapter VII);
Miscellaneous Medical Essays	Two volumes 8vo. copiously illustrated with some of the plates of the Atlas. The essays had been contributed to the <i>Chung Hsi Wen Chien Lu</i> (Peking Magazine) (see Ch. VII);
Squire's Companion to the British Pharmacopoeia	From the 14th edition with an introduction consisting of Griffith's lessons in Prescriptions and Prescribing;
Principles and Practice of Photography	
Tract on the Cure of the Opium Habit	
Pamphlets (Sheets) on	(1) Vaccination, (2) The Opium Vice and its Cure, (3) <i>Pai Yao-fen</i> (a foreign remedy containing morphine and starch), etc.;

(683) *Chin. Recorder*, Vol. XVIII, p. 289; *China Med. Miss. Jl.*, 1887, p. 132, 1888, pp. 145, 146, 1889, p. 124, 1891, p. 125, 1892, p. 270, 1896, pp. 95, 161, 1897, p. 101; *A Century of Prot. Miss.*, p. 180; *China Med. Jl.*, 1930, p. 984.

(684) *China Med. Miss. Jl.*, 1887, p. 119.—See also *ibidem*, p. 90.

Medical Vocabulary

In six volumes as follows:

- (1) List of terms employed by the author in his work on anatomy with corresponding terms employed in Japan as well as by Drs. Hobson and Osgood;
- (2) List of all anatomical terms used in Chin. medical works and all the terms relating to the human body in Kanghsi's Dictionary;
- (3) Alphabetical list of all terms used in Vols. I and II; those in use at Peking together with a suggested Chinese anatomical and physiological nomenclature;
- (4) Philosophy or physiology of Chinese Medicine;
- (5) A comparison of Chinese medicine with ancient Western medicine;
- (6) A Vocabulary of physiological terms used by the author.

Other works published in addition to this splendid array contributed by Dudgeon may, for the sake of brevity, also be tabulated:—

<i>Year</i>	<i>Author</i>	<i>Title</i>	<i>Reference</i>
1886	H. D. Porter	Elementary Physiology	China Med. Miss. Jl., 1887, p. 171;
1886	John Fryer	Vocabulary of Names of Materia Medica, etc.	Thomson(684);
1887	John Fryer	Translation of Materia Med. & Therapeutica by Rayle and Headland	Thomson(684);
1887	Douthwaite	The Eye and Its Diseases	Thomson(684);
1887	Jos. C. Thomson	Voc. of Diseases in Chinese and English	China Med. Miss. Jl., 1887, p. 80;
1888	Dr. V. P. Suvoong	Translation of Physical Vademecum by Hooper (in 8 volumes)	Thomson(684);
1889	Osgood-Whitney	2nd edition of Gray's Anatomy (1,000 copies)	Whitney, China Med. Miss. Jl., 1887, p. 91;
1889	Whitney	Primary Physiology	Whitney, China Med. Miss. Jl., 1897, p. 91;
1890	Whitney	Intermediate Physiology	A Century of Prot. Miss., p. 266;
1890	S. A. Hunter	Manual of Therapy and Pharmacy (being a translation of Squire's "Companion")	China Med. Miss. Jl., 1890, p. 214, 1891, p. 36;
1891	Kerr	Surgery	Ibidem, 1891, p. 171;
1892	Dr. Wan Tsun-mo	Translation of Mitchell Bruce's General Therapeutics	Ibidem, 1892, p. 144.

Of the above authors, special mention must be made of Dr. Wan Tsun-mo who continued to work for many years under the auspices of the Canton Medical Missionary Society, participating with Dr.

Whitney in the preparation of Kerr's medical vocabulary and compiling in 1898 one of his own besides translating other medical books (685).

Thus, in addition to the earlier published books, a considerable amount of medical literature in Chinese was available, but many drawbacks were still apparent. As can be seen from our compilation, individual workers in those days were so little in touch with one another, that sometimes the same work was independently translated by two of them. Opinions as to the felicity of the Chinese terms chosen by individual authors naturally varied (686)—a uniform nomenclature coming into being only after years of patient effort. Other criticisms were made. Dr. Neal for instance, in an article on Medical Textbooks in China issued in 1896 and dealing with works already considered by us, bestowed unstinted praise upon Osgood—Whitney's Anatomy only. Dudgeon's monumental work on the subject as well as his Physiology were considered too expensive for the average reader (687); whilst Porter's Physiology was thought good in itself but too elementary for medical classes. Of Kerr's books, Dr. Neal was favourably impressed by three of them but thought that two of these (Practice of Medicine and Eye Diseases) were a little out of date, while the *Materia Medica* was perhaps more elaborate than necessary. Kerr's Physiology, according to Neal, was written in obscure language and contained some errors, while the author's Surgery was said to be unsuitably arranged. Neal therefore made a strong appeal for the publication of new books in Chinese, including works of reference. It may be added that a few years earlier (1888), Dr. Whitney suggested the publication of a new *Quarterly Medical Journal in Chinese* without, however, meeting with immediate success (688).

Finally, in this survey of educational activities, due notice must be taken of the first definite steps towards the proper *training of Chinese nurses*. Quite probably not all early endeavours made in this direction are known. According to available information, it seems that the first attempt was made by Dr. Boone in *Shanghai* who reported in 1887 (689) that

one man and one woman are under special training to fit them for the performance of the duties of trained nurses.

(685) *China Med. Miss. Jl.*, 1892, p. 144, 1896, p. 95 (Kerr), 1905, p. 53 (Cousland).

(686) See e.g. the polemic of Dudgeon against Osgood in Vol. XIII of the *Chinese Recorder*.

(687) To us nowadays it would seem that the price of Tls. 5 demanded for the Anatomy (Thomson, 684) was by no means excessive.

(688) Neal, *China Med. Miss. Jl.*, 1896, p. 57; Whitney, *ibidem*, 1888, p. 59.

(689) *Chin. Recorder*, Vol. XVIII, p. 42.

Foochow. A regular class for nurses was instituted in Dr. Corey's (690) hospital at *Foochow* (known at the time as Liang Au Hospital and later on as the Magaw Memorial Hospital) to which Nurse Ella Johnson had come in 1888. She began at once with a class of girls who graduated in 1890 and continued to work in the hospital until 1893 when—marrying Dr. Kinnear—she took active part in his labours until they both retired in 1928(691). The Magaw Hospital school was under the charge of Miss Cora E. Simpson with whose remarkable achievements we shall deal in a future chapter(692).

Nanking. About the same time (1888), training of nurses was started by Miss Esther H. Butler of the American Friends Mission and a graduate of the Chicago Training School. She began work in 1887 as matron and nurse in Dr. Beebe's hospital at *Nanking*(693).

Canton. Early attempts to train midwives were made at *Canton* by Drs. Niles and Fulton. In 1893 the former spoke of a female assistant who was very proficient in midwifery(694).

Before reviewing *hospital activities*, a few general remarks seem called for. The question of exacting *payments from the patients* began to attract more attention than ever, the more so as the Medical Missionary Journal was now available for discussion. Opinion upon this point was still rather divided. A few doctors were against charges for purely practical reasons, Dr. Douthwaite for instance declaring that his people were too poor for any demands of this kind. Others seem to have stuck to the principle of gratuitous treatment as conceived by the early pioneers on theoretical grounds. This attitude was certainly most laudable as compared with some utterances in not always happily-chosen words such as "the Chinaman ought to pay for what he got."

On the other hand, the advocates of charges had two strong arguments in their favour, viz:—(a) that gratuitous treatment might keep away well-to-do and influential patients: (b) that even the poorer classes were apt to look with some distrust upon free drugs. And, since the charges made were uniformly low and altogether dispensed

(690) Dr. Corey was joined in 1886 by Miss Susan R. Pray (who soon left) then, in 1887, by Miss M. E. Carlton. Dr. Ellen M. Lyon came out in 1891 and continued to work until her death in 1919 (*Chin. Recorder*, Vol. XVIII, p. 42; *China Med. Miss. Jl.*, 1887, p. 181; *China Med. Jl.*, 1919, p. 613).

(691) Dr. Kinnear was a widower, his first wife having died of cholera while travelling with her husband from Foochow to Shaowu (*Whitney, China Med. Miss. Jl.*, 1897, p. 91).

(692) We are indebted for information about Nurse Johnson-Kinnear to Miss Simpson (Letter of June 1, 1929).

(693) 2nd Rep. of the Philander Smith Mem. Hop., *China Med. Miss. Jl.*, 1889, p. 29.—See also *A Century of Prot. Miss.*, p. 528.

(694) Watson, *China Med. Miss. Jl.*, 1905, p. 108; *ibidem*, 1894, p. 59.

with in case of the very poor, it is not surprising to find that the principle of making patients contribute to the upkeep of the institutions gained ground (695).

Some attempts were made to do away with the rather disadvantageous system of letting patients cater for themselves. A few hospitals appointed their own cooks but unfortunately this policy often proved a financial failure and was eventually given up (696). Rome certainly was not built in one day!

The hospital and dispensary work of the *Canton Medical Missionary Society* was assiduously carried on both in the city and in a varying number of out-stations, including *Nodoa* and *Kiungchow* in Hainan, Mr. Jeremiassen and specially Dr. McCandliss receiving the support of the Society. On the mainland, Dr. Graves' work at Sz-Ui and that of Dr. Joseph C. Thomson who in 1886 had made Macao his headquarters but worked as far as circumstances permitted at *Yeung-kong* (陽江) or nearby, deserve mention. Dr. Thomson carried on until 1892 when he went on furlough, afterwards (1894) taking up work for the Chinese in Canada (697).

Canton. In Canton itself, Dr. John Myers Swan who had arrived in 1885, commenced in 1887 or 1888 activities at the hospital and, in the latter year was appointed medical assistant. During Dr. Kerr's absence in 1893 he was in charge of the male department. Dr. D. Beattie was appointed his substitute in 1894 but, soon after Dr. Kerr's return, was compelled owing to sickness in his family to return home.

Dr. So To-meng, while not taking a prominent part in the class work, won the praise of all through his activities in the hospital, being the anaesthetist for over twenty years.

According to Dr. Kerr's 1891 report

in the early part of the year our time and that of our medical assistants was for a time taken up in seeking to recover some patients from the plague which destroyed thousands of lives in the Southwest, even causing temporary suspension of business in several market towns. Timely treatment and obedience to directions afterwards brought about cure, though some of the incidents were most distressing.....

Operations for stone of the bladder continued to figure prominently in the surgical work, Dr. Kerr publishing in 1894 an article dealing with his personal experiences in 894 cases. He mentioned that

(695) Chin. Recorder, Vol. XVIII, p. 246; China Med. Miss. Jl., 1887, p. 177, 1888, p. 184, 1894, pp. 136, 181.

(696) Hospital Reports from Chefoo, Foochow and Taiwanfu, China Med. Miss. Jl., 1887, p. 83 and foll.

(697) Dr. Thomson returned to China in 1918 where he faithfully carried on his labours until his death in 1926 (China Med. Jl., 1927, p. 294).

Dr. Parker had performed 32 operations for this complaint, Dr. Dickson 9 and Wong Fun 33 (698).

It was gratifying that—as Kerr put it in his 1896 historical sketch—

at the present time the larger part of the funds comes in one way or another from the Chinese.

In fact records for the year 1894 showed foreign contributions of \$1,012 as against \$2,411 from the Chinese, made up as follows:—

Contributions by private individuals.....	\$922.00
Contributions by officials	680.00
Rent from patients for separate rooms.....	600.00
Obligatory entrance fee	209.00
TOTAL	\$2,411.00 (699)

Amoy. Due notice must be taken of the arrival in the year 1888 of Miss Y. May King, known afterwards as Yamei Kin—the first Chinese lady physician to have graduated abroad. Born in 1864, the daughter of the Pastor Chin Ling-yu, she lost her parents during a (? typhus) epidemic when 2½ years old and was adopted by Dr. and Mrs. McCartee, then with the American Presbyterian Mission at Ningpo. In 1869 she went with her foster-parents for one year to America, then to Ningpo, Shanghai and Japan in which latter country Dr. McCartee served with the Chinese Legation until 1881. Then she began to study medicine in America graduating in May, 1885, at the head of her class at the Woman's Medical College of the New York Infirmary. After graduation she worked in Philadelphia, Washington and New York and was for some months resident physician in the New York Infirmary as well as in the Chinese Asylum at Mt. Vernon. Being a skilful microphotographer she published in 1887 in the New York Medical Journal an article on "The Photomicrography of Histological Subjects" which earned great praise.

In 1888 she went to Amoy under the auspices of the Women's Board of the Dutch Reformed Church and stayed there until 1889 when—contracting malaria—she took residence in Japan and worked in connection with the Southern Methodists at Kobe. In 1894 she married the Spanish-Portuguese musician and linguist da Silva, a son being born to her in 1896. We will deal with Dr. Yamei Kin's further

(698) China Med. Miss. Jl., 1894, p. 104.

(699) Chin. Recorder, Vol. XVIII, p. 289; China Med. Miss. Jl., 1887, p. 132, 1888, p. 36, 1891, p. 125, 1892, p. 270, 1894, p. 59, 1895, p. 137, 1896, p. 95; A Century of Prot. Miss., p. 384.

career, marked equally by professional success and great sorrow in her private life, in a future chapter(700).

Ningpo. A dispensary and a hospital were opened in 1886 at *Ningpo* under the auspices of the Church Missionary Society by Dr. C. C. de Burgh Daly, the Customs Medical Officer in the port. The establishment, known under the name of the Hao-meng-fong Hospital, seems to have taken care of opium addicts as well as other patients. Dr. Daly, who was joined in 1892 by the medical missionary Browning, carried on as honorary surgeon until he was transferred in 1893 to Newchwang. The resident doctor also having left, the Chinese assistants successfully carried on for half a year when Dr. R. S. Smyth of the Church Missionary Society arrived to take charge(701).

In 1889, Dr. James Skiffington Grant arrived to take over the medical establishment of the American Board Mission under Dr. Stephen P. Barchet. A men's hospital with twenty beds and one for women with 10 beds existed, but everything was of poor description, even the instruments being old and rusty. To remedy this unpromising situation, Dr. Grant took over the Ningpo port practice, putting \$200 aside every month until he had saved \$8,000 to build a new hospital for men and to enlarge the one for women. He carried on the work most successfully, enjoying the hearty support of the Chinese who, on the occasion of his 60th birthday (1921), presented him with \$9,000 (used for an X-ray plant). In 1926, Dr. Grant laid the cornerstone for a fine new hospital but died a few weeks afterwards in January 1927(702).

The Rev. Robert Swallow of the English Methodist Free Church Mission, who had been at Ningpo since 1874, began the study of medicine during his first furlough in London and took the rest of his course at San Francisco (where he travelled during his summer vacations), graduating finally in 1892. He then began dispensary and hospital practice, training a number of young Chinese Christians as assistants—the best being given further opportunities for advanced study elsewhere. It is estimated that, until his retirement to England in 1919, Dr. Swallow treated about 200,000 patients(703).

Shanghai. Most satisfactory progress was made at *Shanghai*. In January 1893, a *Sanitary Board* was created in the International Settlement, composed of Health Officer Dr. Henderson, the Municipal

(700) Chin. Recorder, Vol. XVI, p. 356; China Med. Miss. Jl., 1887, p. 138 and personal information.

(701) Customs Med. Rep. No. 32 (1886), p. 69 and 47 (1893-94), p. 1; China Med. Miss. Jl., 1892, p. 64, 1893, p. 199, 1894, p. 140; A Century of Prot. Miss., p. 27.

(702) China Med. Jl., 1927, p. 182.

(703) A Cent. of Prot. Miss., p. 129; China Med. Jl., 1919, p. 97.

Engineer, the Captain-Superintendent of Police and the Sanitary Inspector. In June of the same year, a member of the Watch Committee was added and a permanent secretary appointed to replace Dr. Milles who had, up to then, acted in an honorary capacity.

In 1884, a beginning had already been made with *health laboratory work* by attempts to verify the nature of the frequent cholera outbreaks in Shanghai. In the Municipal Health Report for that year, it was stated that in one foreign case (ascribed to the partaking of large quantities of raw milk from a Chinese dairy)

the comma bacillus, as described by Dr. Koch, was found in great numbers in the bowel discharges during the disease, disappearing from these when, found at a later period, they had lost their characteristic appearances. The bacillus was not found in the intestinal walls or in the contents of the bowels after death.

In 1885, Drs. Macleod and Milles (Dr. Henderson's partners) reported positive cultural findings, thus fully confirming both Koch's results and the existence of Asiatic cholera at Shanghai. Their researches were continued in 1886 and 1887, in which latter year, Dr. Macleod took his cultures to Koch's Institute in Berlin in order to complete the work and lay it before the Royal Society.

Dr. Macleod then proceeded to Paris to study under Pasteur. Henderson, pointing to this in the 1890 report, suggested the foundation of a Pasteur Institute at Shanghai. The matter was referred to the next Taxpayers' Meeting but was turned down.

Success came in 1893 when the plan for starting an establishment for calf lymph preparation, which at the same time would form the nucleus of a public health laboratory, was approved. As discussed in the chapter on vaccination, this idea was actually carried out in 1896 (704).

The sphere of activity of St. Luke's Hospital was continuously enlarged. New members were added to the staff which, in 1893 consisted of the following workers besides Dr. Boone:—

Dr. R. A. Jamieson,	Honorary Surgeon;
Dr. H. Perkins,	Hon. Dental Surgeon;
Dr. Duncan Reid,	Specialist for Eye Diseases;
Dr. Zau Vun-quae,	House Surgeon;
Mr. Kwong Yu-jue,	Apothecary;
Wo Qun-zie (705),	Head Nurse.

In 1888, the lots of land in front of the hospital were bought and a hospital was erected for *women and children*. It was first under Dr. Maria Haslep, and later Dr. Mary Jamieson Gates. Some pupils

(704) Municipal Health Reports of the Shanghai International Settlement, *passim*.

(705) Became afterwards house-surgeon (China Med. Miss. Jl., 1901, p. 24).

were trained by the former, one of whom, Miss Wong, was House Physician in 1900 under Dr. Gates.

It was the policy of the hospital to make charges to all except the poorest patients (706).

Dr. Reifsnyder was joined in November, 1887, by Dr. Mary Gale and Miss E. C. Andrews of her Mission. Owing to ill-health, the former was not able to continue long but was replaced in 1893 by Dr. Emily Garner.

The degree of esteem which the hospital enjoyed from both Chinese and foreigners became manifest in August, 1898, when the main building of the plant was destroyed by fire. Almost immediately, sufficient subscriptions were forthcoming to rebuild the hospital (707).

In 1892, Dr. Swinney was able to open the A. G. Main Hospital where she continued to work until forced by failing health to resign in 1895 (dying five years later). Her successor was Dr. Rosa W. Palmborg, who had arrived at Shanghai in 1894 and carried on there until 1902 when the work was removed to Liuho (瀏河), a town about twenty miles north-west of the city (708).

A dispensary and out-station in St. John's College was opened by Dr. Percy Matthews of the American Episcopal Mission who had arrived in 1888 (709).

Foochow. In regard to *Foochow*, the information embodied in the paragraphs dealing with educational work must be supplemented now:—

Much additional labour was caused to Dr. Whitney when the Chinese Hospital at Foochow was burnt in 1886. His health broke down but the work was successfully continued by the Chinese assistants, with occasional visits from Drs. Rennie and Adams.

As previously mentioned, Dr. Whitney removed to *Shaowu* in 1888 and opened a dispensary and hospital near the East Gate where much of the work again had to be left in the capable hands of Chinese helpers. Whitney stayed at Shaowu until 1891. After his departure, the station was kept open by the assistants until Dr. E. L.

(706) Chin. Recorder, Vol. XVIII, p. 42; China Med. Miss. Jl., 1891, p. 254, 1894, p. 216, 1900, p. 196, 1901, p. 24.

(707) China Med. Miss. Jl., 1888, p. 96; A Century of Prot. Miss., p. 470.

(708) China Med. Miss. Jl., 1893, p. 64 and A Century of Protest. Miss., p. 345. In Thomson's list (529) it is stated that Miss S. M. Burdick of the Seventh Day Baptist Miss. Soc. arrived in 1889 as a medical worker. In the Century of Protestant Missions this lady is said to have been a Ph. B. and to have taken over school work. Apparently Thomson's statement represents one of the few errors in his long compilation.

(709) Thomson, l.c. (529), China Med. Miss. Jl., 1892, p. 67.

Bliss (arrived at the end of 1892) started with dispensary work in 1893.

Dr. Kinnear, who had arrived in autumn of 1889, took charge of the Ponasang Hospital at Foochow in January, 1890, with the aid of an efficient Chinese assistant. In December of 1892 he began to hold, once weekly, a dispensary at Yang-seng Village near the *Pagoda Anchorage* (羅星塔). This new station was taken over at the end of the year 1893 by Dr. Whitney who was compelled, however, to send severe cases to the Foochow hospital. In 1896 he once more took charge of the Ponasang hospital, replacing Dr. Kinnear who went on leave(710).

As Customs Medical Officer, Dr. Rennie reported in September 1887

in the place of the native hospital on Changchow Island, which was accidentally burned down in May 1886, the combined generosity of native officials, foreign residents, and native merchants enabled us to procure a more open site, and erect thereon a more substantial and commodious building. Through the aid of members of the Chamber of Commerce a woman's ward was added and dedicated to the memory of the late Sir Harry Parkes.

The new hospital, though a little more inconveniently placed for city patients, removes, by its isolated position, the constant dread of a fire arising in native property and attacking a crowded hospital with a narrow entrance, which, while the old institution was in use, existed.

In April the department for out-door patients was completed, and in June we were ready to receive in-patients. From the increasing numbers of both classes of patients, the new hospital seems to be highly appreciated.

In 1893 Misses Barr and I. Chambers were appointed to the ward for women by the Church of England Zenana Missionary Society to act as nurses under Dr. Rennie(711).

Swatow. The medical work commenced by Dr. Daniells at *Swatow* was resumed in 1889 by Mrs. A. K. Scott, M.D. of the American Baptist Missionary Union. Miss A. M. Ross, M.D., arrived in 1891 (712).

Peking. At *Peking*, the Chala (Ping-chih Men Wai) Hospital and Dispensary was founded by the Catholic Mission in 1886. This establishment, intended for Chinese only, was destroyed during the troubles of the year 1900 with all its records so that little is known about its activities(713).

Dr. Atterbury opened the *Anting* Hospital in 1886, on behalf of the American Presbyterian Mission. An opium refuge possessing a

(710) China Med. Miss. JI., 1887, p. 84, 1892, pp. 120, 268, 1897, p. 91.

(711) Customs Med. Rep. No. 34 (1887), p. 5; A Century of Prot. Miss., p. 53.—Miss Derry of the same mission, who arrived two years earlier (1891), worked as a nurse for women in the missionary hospital (ibidem, p. 52).

(712) Ibidem, p. 335.

(713) Bussière, Nation. Med. JI., 1928, p. 18.

total capacity of 45 beds, was connected with this establishment. Atterbury was joined in spring of the year 1887 by Dr. Geo. Yardley Taylor who was in charge during a furlough of the former. He left in 1893 for Paotingfu(714).

Medical work for *women* was begun by the American Presbyterian Mission with the advent of Dr. Marian Sinclair and Nurse McKillican in 1888. In the year following, the work was transferred to the Drum Tower West compound where a few Chinese buildings were used to accommodate a small number of in-patients. Dr. Sinclair married in 1894; in the next year, Dr. Eliza E. Leonard came to take her place, continuing until 1900(715).

Dr. Alice K. Marston of the Church of England Mission (arrived 1889) commenced, in 1890, by opening a dispensary for women and children in the compound of her mission. In 1891 she procured the services of Miss Parsons as dispenser and at the same time placed a young Christian woman under training as assistant. In October of the same year more suitable premises for the dispensary were obtained, the work continuing until 1900 when Miss Marston suddenly died whilst travelling home from Japan(716).

It was stated in the foregoing chapter that after Dr. Lambuth had left Peking, the medical enterprise of the American Methodist Episcopal Mission was first carried on by his assistant Dr. Ts'ao Yung-kuei, later by other doctors. Noteworthy among the latter are the Rev. W. H. Curtiss, who arrived at Peking in 1887, and the Rev. Crews who came about the same time from Chungking to assume charge. They had a hospital with 10 beds at their disposal(717).

Dr. Gloss of the same Mission went to Peking from Tientsin in or soon after the year 1890 and started a dispensary situated in the missionary grounds(718).

Tengchow. Dr. Neal rented a small house at *Tengchow* in 1890 to serve as a temporary hospital but left—as already stated—in the same year for Tsinanfu. Dispensary work was carried on at Tengchow by a Chinese assistant until Dr. W. F. Seymour arrived in 1893. The latter continued on in the simple Chinese quarters until 1910

(714) China Med. Miss. Jl., 1887, p. 113, 1894, p. 130, 1901, p. 48.

(715) China Med. Miss. Jl., 1892, p. 301; Cormack, China Med. Jl., 1926, p. 525.

(716) China Med. Miss. Jl., 1892, p. 117, 1893, p. 42, 1900, p. 222; China Med. Jl., 1926, p. 525.

(717) China Med. Miss. Jl., 1887, p. 113; A Century of Prot. Miss., p. 449.

(718) China Med. Jl., 1928, p. 334 and Directory of Nat. Med. Assoc., 1930. Notice must also be taken of the arrival, in 1889, of Dr. W. C. Noble, American Board Mission, who was joined for a short time by Miss Murdock (A Century of Prot. Miss., p. 276).

when Mr. Louis Severance provided a small but thoroughly equipped hospital(719).

Chefoo. A Chinese hospital at *Chefoo* was founded under the auspices of the Taotai in 1886, supported mainly by contributions. It was in charge of Customs Medical Officer W. A. Henderson and a Chinese assistant. The institution was a great success, caring in 1891 for 6,270 patients. Dr. Henderson left the port in the same or early the next year. His successor, Dr. E. W. von Tunzelmann, makes no allusion in his first report to the Chinese establishment but speaks of a General Hospital evidently intended for the foreign community only. It was under his charge with Catholic Sisters of Mercy as nurses.

A purely Chinese undertaking was the Hall of Benevolence, finished in 1890, which maintained, besides other charitable enterprises, a hospital and refuges for opium smokers and homeless sick men and a vaccination department.

In 1893 the military authorities provided a special hospital and dispensary to take care of the increased garrison of the city(720).

Missionary medical work was performed for a short time by the Rev. Jas. Cameron of the China Inland Mission who began to study medicine in 1883 and—returning to China at the end of 1885—took temporary charge until Dr. Douthwaite came back in 1886. The latter opened in the same year a branch dispensary in Fushan (福山) city and built, in 1888, a hospital at Chefoo, named in honour of his wife Lily who had died in 1887. Having charge during the Chino-Japanese war of a Red Cross Hospital, Dr. Douthwaite was signally honoured by the Chinese Government and the local authorities, but died unfortunately in October, 1899, of dysentery when 51 years of age(721).

Hankow. The activities of the Wesleyans at *Hankow*, interrupted when Dr. Langley left in 1878, were resumed about 1885 with a dispensary. In 1886 Dr. Arthur Morley came out, followed in the next year by Sydney R. Hodge and soon afterwards by Miss Sugden. The Women's auxiliary devoted a fund subscribed in commemoration of Queen Victoria's Jubilee to the building of a women's hospital which was opened on December 12, 1888. A hospital for men followed in 1889 where Dr. Hodge carried on until his death in 1907(722).

(719) *China Med. Miss. Jl.*, 1891, p. 54, 1898, p. 11; *A Cent. of Prot. Miss.*, p. 389; *China Med. Jl.*, 1928, p. 410.

(720) *Customs Med. Reports No. 33* (1886-87), p. 8 and 44 (1892), p. 16; *Customs Decennial Rep.*, 1st Issue, pp. 60, 76; *China Med. Miss. Jl.*, 1892, p. 148, 1894, p. 136.

(721) *China Med. Miss. Jl.*, 1892, p. 182, 1900, p. 48.

(722) *China Med. Miss. Jl.*, 1890, p. 286, 1907, p. 266; *A Cent. of Prot. Miss.*, pp. 94-95.—Two missionary women (who had apparently not graduated in medicine) commenced dispensary work on behalf of the Wesleyan Mission at Kuang-chi (廣濟) in 1885.

The Margaret Hospital for women, in connection with the London Missionary Society, was opened in 1894 under Dr. Harris Gillison (723).

Kalgan. The medical work of the American Board Mission at *Kalgan* which had come to a standstill with Dr. McBride's death in 1890, was resumed in 1894 with the arrival of Dr. Waples (?-724) who built a small hospital but was compelled to leave China in 1898 on account of his wife's health.

Hangchow. Thanks to the wisdom and initiative of Dr. Duncan Main, great progress was made at *Hangchow*. His hospital was provided with proper beds and was well conducted on modern lines; charges were made to the patients. Dr. Herbert Hickin of the Church Missionary Society arrived in 1887 to assist Dr. Main.

In the same year (1887) a beginning was made to admit a few male lepers to the hospital. To enlarge the scope of this work, appeals were made in 1891 to the International Mission for Lepers (founded 1874) which met with a ready response, both funds to start the work and an annual grant being secured. A special building for male lepers was opened in 1892, followed in 1893 by a smaller one for women.

As mentioned in a report published in 1894, a few *insane* were treated as well (725).

Ichang. Dr. G.B.D. McDonald of the Church of Scotland Mission arrived in 1887 at *Ichang* to give new impetus to the work carried on by the Rev. Cockburn, but had to retire on account of ill-health after 18 months. The dispensary was continued under Cockburn who was eventually able to secure the help of Customs Medical Officer E. A. Aldridge. A small hospital was opened in March, 1890, shortly after the latter's arrival.

In December of the same year (1890), Dr. Wm. Pirie of the Church of Scotland Mission arrived and was in charge until his death in 1893. Dr. Aldridge mentioned in his last available report for the half-year ended March 31, 1894, having resumed the work. Afterwards it was probably in the hands of Missionary Cockburn again until early in 1896 when Dr. D. Rankine arrived.

(723) *China Med. Miss. Jl.*, 1894, p. 139.—Dr. A. M. Mackay seems to have been in temporary charge in 1891 (*China Med. Miss. Jl.*, 1892, p. 55).

(724) As mentioned in the *Century of Protestant Miss.*, p. 286.—A record in the *China Med. Miss. Jl.*, 1892, p. 274, speaks of Dr. Wagner.

(725) *China Med. Miss. Jl.*, 1888, p. 184, 1892, p. 303, 1894, p. 212; *A Century of Prot. Missions*, p. 27; *China Med. Jl.*, 1930, pp. 744, 789.

The Catholic Franciscan Sisters started hospital and dispensary work in Ichang in 1890 (726).

Wuhu. Dr. George Arthur Stuart, a native of Maryland and graduate from the Iowa College of Physicians and Surgeons came, after a short stay at Nanking, in the spring of 1887 to *Wuhu*. Here he opened in 1889 a General Hospital on I-chi-shan, a hill on the river bank, 1½ miles below the city. Both this establishment and three dispensaries connected with it were much frequented. Dr. Stuart carried on until 1896 when, succeeded by Dr. E. H. Hart, he again went to Nanking (727).

The new buildings erected by the Roman Catholic Mission at *Wuhu* during the years 1888-89 comprised a hospital and a sanitarium.

The *Yu-ying-t'ang*, founded in 1890-91, provided also for a free hospital as well as an alms-house for the aged and sick (728).

Wuchang. The medical activities of the American Church Mission at *Wuchang* were continued by Dr. Merrins who was joined by Miss Macrae.

The career of Dr. Alexander Mackay was a short but most remarkable one. Working originally under the London Missionary Society at Hankow and then at *Wuchang*, he afterwards set up private practice in the latter city but continued to regard himself as a medical missionary. Hospital work of the London Missionary Society was begun under him in 1889 and a new establishment opened in 1892 or 1893. At the same time, he also looked after the dispensary established by the Wesleyans.

Mackay's benevolent endeavours came to an abrupt end in September, 1896, when—sad to relate—he succumbed to cholera at the age of 32 years (729).

Laoling. The work of the English Methodists (New Connection) in the *Laoling district* (Chuchiachai) was continued by Dr. W. W. Shrubshall who came out in 1888. In 1893 a small hospital for women was opened. Dr. F. W. Marshall, who had come to China the year

(726) Customs Med. Rep. No. 40 (1890), p. 6 and 47 (1893-94), p. 7; China Med. Miss. Jl., 1891, pp. 52, 225, 1893, p. 220, 1896, p. 88; personal information from the Rev. Father Lunter.—According to the Reverend Father the Franciscan Sisters commenced in 1890 also with medical work in Shensi Province.

(727) Customs Med. Rep. No. 33 (1886-87), p. 25 (Aldridge) and 42 (1891), p. 25 (Cox); China Med. Jl., 1907, p. 214, 1911, p. 243; A Cent. of Prot. Miss., p. 442.

(728) Customs Decennial Reports, 1st Issue, pp. 255, 270.

(729) China Med. Miss. Jl., 1891, p. 256, 1893, p. 136, 1894, p. 135, 1896, p. 59, 1897, p. 185.

before(1892), took charge of the station when Shrubshall left in 1896(730).

Taiyuanfu. At *Taiyuanfu*, Dr. Edwards who was joined at this period by Miss Whitacker (Nurse), opened an opium refuge in 1886. A similar undertaking was started in 1891 by Mr. G. B. Farthing on behalf of the Baptist Missionary Society which—though having no medical man in the field—devoted attention to the treatment of simple cases(731).

Nanking. The work of the Philander Smith Memorial Hospital at *Nanking*, the opening of which in the year 1886 has been described in a previous paragraph, comprised the care of opium addicts. Contrary to the practice adopted in most refuges, the drug was *gradually* (though rather quickly) withdrawn.

Dr. Beebe was joined in 1889 by Dr. E. R. Jellison who was in charge of the hospital during the former's absence in 1891(732).

The Rev. W. E. Macklin (M.D. from Canada) came to *Nanking* in 1886 as the first missionary of the Foreign Christian Missionary Society. At first he had a dispensary in a Buddhist temple but soon opened a dispensary and hospital on a site near the Drum Tower bought by his mission. Out-patients were also seen in a place established soon afterwards near the South Gate.

The American Friends Mission sent Dr. Lucy Gaynor in 1892 who opened, in 1896, a hospital for women and children with the aid of a bequest from Dr. C. G. Hussey(733).

Soochow. Dr. Park continued in charge of the *Soochow* hospital except for the years 1893-95 when his place was temporarily taken by Dr. E. H. Hart. He had for one year (1890-91) the assistance of Dr. R. H. Campbell. Prominent among his Chinese assistants were the Rev. C. K. Marshall (Dzau Tsz-seh), who after several years' work at *Soochow* was in charge of a dispensary at *Nanziang*, and Dr. Dzung. In 1892, the latter received like Dr. Park, the honorary rank of civil official for his successful treatment of military officers. Park was at the same time nominated honorary official surgeon to the Governor.

A curious piece of information is that, at about the same time, ten Chinese formed an association devoted to the saving of would-

(730) *China Med. Miss. Jl.*, 1891, p. 124, 1892, p. 268, 1894, p. 131, 1897, p. 191; *A Cent. of Prot. Miss.*, p. 109.

(731) *China Med. Miss. Jl.*, 1887, p. 175, 1894, p. 214; *A Cent. of Prot. Miss.*, p. 80.—Dr. Edwards' place was taken for a time in 1891 by Dr. Cox (*China Med. Miss. Jl.*, 1891, p. 135).

(732) *China Med. Miss. Jl.*, 1887, p. 177, 1891, p. 39, 1892, p. 118.

(733) *China Med. Miss. Jl.*, 1889, p. 42; *A Cent. of Prot. Miss.*, pp. 347, 528; *China Med. Jl.*, 1912, p. 191.

be opium suicides. One of them took lessons from Dr. Park in order to be able to render first aid (734).

Mukden. At *Mukden*, a new hospital was opened in the year 1887 with a capacity of 50 beds (735).

Chungking. The Rev. J. Cameron, with whose earlier activities at Chefoo we have already dealt, came to *Chungking* in 1886 where he continued to work until 1892 when he fell a victim to cholera (736).

A most distinguished career was begun in the year 1890 when Dr. Cecil J. Davenport went to Chungking. A native of Australia (born 1863) and student at St. Bartholomew's, London, he was made, when 26 years of age, a Fellow of the Royal College of Surgeons. Sent by the London Missionary Society, he arrived in China in 1889. At Chungking in March, 1891, he opened a dispensary and small hospital. In 1895, returning from furlough, he resumed work at Wuchang (737).

While the equally meritorious activities of Dr. McCartney have already been considered together with his educational endeavours, it must be added that some medical work was also done by the English Friends' Foreign Missionary Association. The first representatives of this society, Mr. and Mrs. R. J. Davidson, arrived at Chungking in 1890, having spent the first years of their stay in China since 1886 at Hanchung, where they studied the language and, at the same time kept open the dispensary of the China Inland Mission during the absence of Dr. William Wilson.

At Chungking they were most successful, managing to see thousands of out-patients (both men and women) until 1902 when the sphere of medical activities of the Friends was shifted to T'ung-ch'uan (潼川) (738).

T'aiiku. Dr. James Goldsbury of the American Board Mission came to *T'aiiku* in 1889 and carried on until his death four years later from typhus fever. Dr. Atwood, whose arrival in the neighbouring *Fenchoufu* was announced in the last chapter, built in 1891 a hospital and residence. Besides general practice, the treatment of opium addicts was undertaken with so much success that in 1896 the Governor of Yü-lin-fu, North Shansi, invited Atwood's assistant Li to spend some time with him in order to open an opium refuge. This task was well performed, Assistant Li attending at the same time to other patients as well (739).

(734) *China Med. Miss. Jl.*, 1893, pp. 42, 100; *A Cent. of Prot. Miss.*, p. 418.

(735) *China Med. Miss. Jl.*, 1888, pp. 35, 83.

(736) *Ibidem*, 1892, p. 182.

(737) *Ibidem*, 1891, p. 184; *China Med. Jl.*, 1926, p. 933.

(738) *A Century of Prot. Miss.*, pp. 164-165, 169.

(739) *China Med. Miss. Jl.*, 1892, p. 144, 1893, p. 119, 1896, p. 262.—Most successful work was carried on at *T'aiiku* by Dr. W. A. Hemingway from 1904 until his death in 1932 (*Chin. Med. Jl.*, 1932, p. 1229).

Pakhoi. Turning to new medical undertakings begun during this period mention must first be made of the beginning of most important work at *Pakhoi* (北海). Dr. E. G. Horder of the Church Missionary Society had come to this Southern port in 1883 but, for various reasons, especially the Franco-Chinese war, could only commence hospital work in 1887. Care was taken not only of general patients of both sexes and opium smokers, but *lepers* for whom half of the eighty available beds were set aside, were given special attention. These unfortunate beings were not only sheltered and treated but taught various handicrafts. The work for the lepers, though supplemented by similar endeavours of the Roman Catholic Mission, became so successful that after about five years, the accommodation had to be increased to 200 beds (for both sexes). At the same time, general practice was vigorously continued by Dr. Horder who, during the years 1886-1904 was assisted by Dr. L. G. Hill.

A Chinese hospital, the T'ai Ho I Chū (太和醫局) was founded at *Pakhoi* about the year 1890 by Cantonese merchants. As its regular attendant an old-style practitioner, who had been trained at Canton and had attained professional success there, was chosen. During part of the year, when epidemics were liable to occur, he was assisted by a local Chinese physician while, for a couple of months in spring, a third man was employed for vaccination (740).

Eastern Mongolia. Most remarkable was the work of the Rev. James Gilmour, London Missionary Society, in *Eastern Mongolia*. Though not a medical man, in 1886, he commenced seeing patients in his tent when travelling from village to village as earlier endeavours to induce the sick to come to his base had failed. He soon met with most gratifying success, sometimes 100-200 patients seeking aid in one day.

It was Gilmour's ardent wish to be accompanied in his itinerations by a medical colleague but, to his great disappointment, Dr. Roberts was recalled to take Mackenzie's place at Tientsin soon after his arrival. It was only after Gilmour's death in 1891 that Dr. McFarlane came to take charge of the medical work (741), though for a short period only.

Tsingchowfu. Activities at *Tsingchowfu* (青州府—250 miles west of Chefoo) were commenced early in the year 1886 by Dr. J. R. and Mrs. A. R. Watson of the English Baptist Missionary Society (arrived in 1885) who—both being medical graduates—could take excellent care of both sexes.

(740) A Century of Prot. Miss., pp. 40-41; Customs Decenn. Rep., 1st Issue, p. 651, 2nd Issue, Vol. II, p. 424, 3rd Issue, Vol. II, p. 261.

(741) China Med. Miss. Jl., 1889, p. 55, 1891, p. 256, 1896, p. 76; A Cent. of Prot. Miss., pp. 5, 665.

Tsunhua. A similarly satisfactory arrangement was made at *Tsunhua* (達化) where Dr. N. S. Hopkins of the American Methodist Episcopal Mission arrived in 1886, followed in the next year by Dr. Edna J. Terry of the same mission(742).

The Wesleyan Methodist Missionary Society started dispensary work at *Shiu-chow* (韶州) in the Hakka district of Shiu-kwan (韶關), 275 miles north of Canton, in 1886. As can be gathered from reports published in 1891 and 1893, Dr. R. J. J. MacDonald was in charge—apparently until 1898 when he went as the first missionary of the Society to Wuchow(743).

Chengtu. The medical pioneers at *Chengtu* (成都), the capital of Szechwan province, were Drs. W. L. Pruett and H. R. Parry of the China Inland Mission(744) who started work about the year 1887. Dr. Pruett continued for 2½ years when he moved to *Kweiyangfu* (貴陽府), the capital of Kweichow province. Parry carried on for a few more years but does not appear to have resumed work after the riot of May, 1895.

Dr. O. L. Kilborn of the Canadian Methodist Mission reached Chengtu in 1892 and began to see patients in rooms adapted for the purpose in the general compound of the mission. He was joined in 1893 by Mrs. Gifford Kilborn, M.D. Early in the next year a site was acquired and the building of a proper hospital began. It was in use for one year but soon afterwards was destroyed in the riot.

In autumn, 1896, a new hospital was erected on the same site and brought to completion in spring, 1897; it offered accommodation for 25 male in-patients. A hospital with 32 beds, in a suitable Chinese building, for women and children had already been opened in November, 1896.

A third medical undertaking at Chengtu was started in 1893 by Dr. H. L. Canright, formerly at Chungking, on behalf of the American Methodist Episcopal Church which also resumed activities after the riot of 1895(745).

Manchuria. Dr. Westwater came in 1887 from Shantung to *Manchuria*. Since it was impossible at first to gain a foothold in

(742) Chin. Recorder, Vol. XVII, p. 16; A Century of Prot. Miss., p. 449. According to Thomson's list, Dr. L. D. Denny of the same mission had come to the station in 1884 but retired in 1885.

(743) China Med. Miss. Jl., 1892, p. 271, 1893, p. 219; A Century of Prot. Missions, pp. 99, 101; Encyclop. Sinica, p. 598.

(744) Dr. Pruett came to China in 1880 but does not appear to have engaged in permanent medical work. Dr. Parry came out in 1884.

(745) China Med. Miss. Jl., 1891, p. 249, 1892, p. 205, 1895, p. 25, 1897, p. 179; A Cent. of Prot. Miss., pp. 119-123, 149.

Liaoyang (遼陽), he commenced at Haicheng (海城), 40 miles away. In 1892 he was able to instal himself in the city where he built a dispensary and hospital with wards for men and women (746).

Tungkun. The history of the important medical work of the Rhenish Missionary Society at *Tungkun* (Kwangtung Province) goes back to the year 1886, when a dispensary was started. This was—pending the arrival of a doctor from Europe—under Mak Shui, a former student and assistant of the Canton Missionary Hospital, who had settled down in private practice at Tungkun and carried on until Dr. John Kuehne came out in 1889 (747).

Chiang-chiu. Dr. A. Fahmy of the London Missionary Society reached China in 1887, commencing regular activities early in 1888, when he opened a hospital and dispensary in a Chinese building at *Chiang-chiu* (or *Changchow*—漳州) in the Amoy district (Fukien Province), replacing it in 1893 by a proper establishment (748).

Chichow. The activities of Dr. Sewell S. McFarlane at *Chichow* (南翼州), 175 miles S. W. of Tientsin, were also begun early in 1888, when he opened a dispensary with accommodation for 8 in-patients. A temporary hospital with 25 beds followed in November, 1890, replaced in 1894 by a proper establishment with wards for 25 male and 15 female patients, besides a special one for 10 men with ophthalmic diseases (749).

Nang-wa and Kien-ning. John Rigg (M. D. Edinburgh) of the Church Missionary Society, nominated in 1888, first settled with a party of missionaries at *Nang-wa* (南雅口) in the Fuh-ning district of North-West Fukien where a hospital was established in a former tea-factory. A few students were trained and opium patients received

In 1889 Miss Frances Johnson of the Church of England Zenana Missionary Society, said to be the first British-trained nurse in China, joined the mission. In the next year (1890), a medical assistant, educated by Dr. Taylor of Fuh-ning, was sent to *Kien-ning* (建甯) where he became so successful that two of Dr. Rigg's pupils had to be sent to help him. During the first year, 10,000 patients were treated at Kien-ning which was visited once every month by Dr. Rigg.

(746) China Med. Miss. Jl., 1892, p. 144, 1896, p. 153; A Cent. of Prot. Miss., p. 216.

(747) China Med. Miss. Jl., 1887, p. 122; Thomson, l.c. (529); Encyclop. Sinica, p. 481.

(748) China Med. Miss. Jl., 1888, p. 39, 1889, p. 72, 1893, p. 291; A Cent. of Prot. Miss., p. 9.

(749) China Med. Miss. Jl., 1889, p. 124, 1892, p. 1, 1894, p. 219.

The scope of work was increased in 1891 when a trained worker was put in charge of a *Leper settlement* at Kien-ning which was supported by the Mission for Lepers. Eventually Dr. Rigg himself settled down at this station and opened a hospital. At the same time, the work at Nang-wa was continued by his assistants (750).

Teh-ngan-fu. A small hospital and dispensary was established in autumn, 1888, at *Teh-ngan-fu* (Te-anfu—德安府) (Hupeh Province) by Dr. Arthur Morley of the Wesleyan Mission. He had an excellent helper in his assistant, Dr. Li, who took care of the out-patients department when Morley went on leave in 1894. A larger hospital, dedicated to the memory of the Rev. David Hill was built in 1899 (751).

Tsingkiangpu. Dr. Edgar Woods of the American Presbyterian Mission South) began medical activities at *Tsingkiangpu* (清江浦) (Kiangsu Province) in 1888 by holding a dispensary in a small Chinese house. He carried on in this way until 1894 when—his health failing—he was replaced by Dr. James B. Woods (752).

Honan. The first medical workers of the Canadian Presbyterian Mission in Honan were the Rev. J. Frazer Smith and Dr. Wm. McClure who landed in 1888, accompanied by a trained nurse, at Chefoo (753). In October of the next year, Dr. McClure visited some of the cities in *Honan*; in 1890, two parties, each with one of the medical men, itinerated in the field. Thus it became possible for Dr. McClure to settle in October, 1890, at *Ch'uwang* (楚旺) while Dr. Smith gained in May, 1891, a foothold in *Hsinchen* (新登). In 1892 they were reinforced by the arrival of Dr. W. Malcolm (joining Dr. McClure) and Dr. Lucinda Graham who was stationed at Hsinchen. In 1894 it was possible to occupy *Changteh* (彰德) as well (754).

Siokhe. Dr. J. A. Otte of the Reformed (Dutch) Church in America arrived in China in 1888 and opened in March, 1889, the "Neerbosch Hospital" at *Siokhe* (小漢), Fukien Province. This establishment soon won general favour, some of the Chinese officials

(750) China Med. Miss. Jl., 1896, pp. 28, 161; A Cent. of Prot. Miss., pp. 33-34; Balme, l.c., p. 137.—The Cent. of Prot. Miss. (p. 52) claims that a hospital for women was opened in connection with Dr. Rigg's work at Nang-wa in May, 1892.

(751) China Med. Miss. Jl., 1889, p. 77, 1886, p. 59; Encyclop. Sinica, p. 599.—The Wesleyans also started medical work at *An-lu* (安陸) when opening this station in 1891. It was carried on in Chinese premises until a proper hospital for men was built in 1910 and one for women in 1913.

(752) China Med. Jl., 1919, p. 592.

(753) Two other nurses, Miss Graham and Miss I. Macintosh arrived at the end of 1889.

(754) China Med. Miss. Jl., 1892, p. 229, 1894, p. 137, 1900, p. 299; A Century of Prot. Miss., pp. 243-244.

making generous gifts for its improvement. It was permanently kept open until 1895 when Dr. Otte went on furlough.

A *Chinese female nurse*, Lun So, was employed: she was highly efficient, assisting at operations. Unfortunately, she died in 1894, after two years of service.

Another feature was a hospital kitchen which was run with much success, moderate charges being made to the patients for food and treatment given (755).

Kirin. A long and distinguished career was begun when Dr. James A. Greig of the Irish Presbyterian Mission came to *Kirin* (吉林—Manchuria) in 1889. He was followed in 1893 by the Rev. R. J. Gordon of the same mission who settled in *Changchun* (長春) nearby and, like Dr. Greig, won the confidence of numerous patients all over North Manchuria.

Shwangchengp'u. A third new worker in North Manchuria was Dr. Thomas Young of the United Presbyterian Mission, Scot., who came out in 1889 but settled down in 1892 first at *Shwangchengp'u* (雙城堡), afterwards in *Ashiho* (阿什河) (756).

Linch'ingchow. Dr. E. R. Wagner of the American Board Mission began to practice in 1889 at *Linch'ingchow* (臨清州—on the Wei River, 45 miles S.W. of P'angchuang), training two assistants for the needs of his own establishment (757).

Changpoo. Medical activities at the station *Changpoo* (漳浦) 40 miles distant from Amoy on the main road to Swatow, were commenced on behalf of the Presbyterian Church in England in 1889 by Dr. Jas. Howie, who had arrived the year before (758).

Lienchow. Dr. E. C. Machle of the American Presbyterian Church, arriving in 1889, commenced permanent medical work as soon as the station *Lienchow* (連州), 300 miles north of Canton, was opened in 1891 (759).

Suifu. The American Baptist Missionary Union sent, in 1891, Dr. C. H. Finch to their station at *Suifu* (鉅州) in Szechwan province. He was followed in 1893 by Dr. F. B. Malcolm (760).

Tataochen. The scope of the medical work commenced in Formosa by Missionary Mackay was enlarged when in April, 1891, Governor

(755) *China Med. Miss. Jl.*, 1890, p. 286, 1894, pp. 71, 132; *A Cent. of Prot. Miss.*, p. 376.

(756) *China Med. Miss. Jl.*, 1891, p. 190; *A Century of Prot. Miss.*, pp. 208, 229.

(757) *China Med. Miss. Jl.*, 1893, p. 130; *A Cent. of Prot. Miss.* p. 283.

(758) *Ibidem*, p. 177 and Thomson's list (529).—By the year 1900 eight medical students were in training at the Changpoo Hospital (*China Med. Miss. Jl.*, 1901, p. 225).

(759) *China Med. Miss. Jl.*, 1900, p. 123; *A Century of Prot. Miss.*, p. 384.

(760) *Ibidem*, pp. 341-342.

Liu Ming-chuan furnished the means to build a hospital at *Tataochen* (大稻埕). Being placed under Dr. Angear it was primarily intended for the treatment of soldiers and workmen(761).

Ichowfu. At the same time (April, 1891), a dispensary was opened at *Ichowfu* (沂州府—Shantung Province) by Dr. C. F. Johnson, who was sent out by the American Presbyterian Mission in 1889 and co-operated in the training of Dr. Neal's first class of students. Dr. Johnson was joined in 1893 by Dr. Anna Larsen, who took over the treatment of women. A hospital was opened in 1897(762).

T'ung-shin. Regular medical work at *T'ung-shin* near Chefoo, a station established about the year 1888 by the Rev. Alex. Williamson of the Scottish Presbyterian Mission and afterwards taken over by the China Inland Mission, was started in 1891 or 1892 by Dr. Horace A. Randle, who had come to Chefoo in 1876 and had graduated in medicine in 1888(763).

Kut'ien. In the year 1892, a beginning was made with work for the lepers at *Kut'ien*, Fukien Province, in response to an appeal from the Rev. W. Bannister of the Church Missionary Society. This was gradually extended to other centres.

Hinghwa. Another successful attempt begun about the same time was a *School for Lepers* instituted by Mrs. W. Brewster of the Women's Foreign Missionary Society of the Methodist Episcopal Church at *Hinghwa* (興化—764).

Shantung. Dr. J. Norman Case, an unconnected medical missionary, began work in 1892 at *Wei-hai-wei* (威海衛) in Shantung and, in 1898 was also the pioneer at *Wentenghsien* (文登縣) in the same province(765).

Chiningchow. As mentioned already in connection with Dr. Neal's educational efforts, Dr. Van Schoick left—after having replaced Dr. Neal for a time (1892-93)—for *Chiningchow* (濟甯州), where he worked until his retirement in 1900(766).

Laohokow. Dr. A. G. Parrott, who had originally come out under the China Inland Mission in 1878, began to study medicine when on furlough in England and returned after his graduation in 1893, to China. Being now connected with the Open Brethren, he settled at *Laohokow* (老河口), a city in the north of Hupeh Province on

(761) China Med. Miss. Jl., 1892, p. 119.

(762) Ibidem, p. 117, 1894, p. 58; A Century of Prot. Miss., p. 391.

(763) China Med. Miss. Jl., 1892, p. 231 and Thomson, l.c. (529).

(764) Anderson, China Med. Jl., 1930, p. 744; A Cent. of Prot. Miss., p. 463.

(765) Ibidem, p. 551.

(766) China Med. Miss., Jl., 1900, p. 137.

the Han River. He remained there until 1900 when he settled in private practice at Shanghai, but devoted much of his time and energy as Honorary Medical Officer to charitable undertakings like the Door of Hope Rescue Homes for Chinese Girls and also served as visiting physician to the Shantung Road Hospital. Thus his death in May, 1923, was a great loss to the community(767).

Kashing. A worker of equal distinction was Dr. W. H. Venable (American Presbyterian Mission S.) who came out to *Kashing* (嘉興), in 1893 where he did hospital work until 1919(768).

Kiayingchow. Finally, the settling down of Dr. H. Wittenberg, a member of the Basel German Evangelical Missionary Society, at *Kiayingchow* (嘉應州—about 150 miles north-west from Swatow) in 1893(769), must be recorded.

(767) China Med. Jl., 1923, p. 528.

(768) Ibidem, 1927, p. 822 and A Century of Prot. Miss., p. 403.

(769) A Cent. of Prot. Miss., p. 477.—The beginnings of the Presbyterian Church of England at Engch'un (永春) in Fukien Province (ibidem, p. 177) will be discussed later on.

CHAPTER X

PERIOD 1894—99

DESCRIBING (a) THE SPREAD OF PLAGUE IN CHINA LEADING TO THE GREAT OUTBREAK AT CANTON AND HONGKONG IN 1894 AND (b) FURTHER CONSOLIDATION OF MEDICAL EFFORTS

History of plague in China—1894 epidemic at Canton and Hongkong—Discovery of Plague Bacillus—Progress of Public Health work at Hongkong—Reorganisation of Tung Wah Hospital—Chinese hospital at Canton—Quarantine measures at Swatow, Ningpo, Shanghai, Newchwang and Tientsin—Whole-time Medical Officer appointed at Shanghai—Tientsin Water-works—Red Cross activities during the war with Japan—Chinese women physicians graduated abroad return to China—Hongkong and China Branch of British Medical Association—Progress of educational work at Shanghai, Nanking, Peking, Soochow, Chichow, Canton, Foochow and Ichowfu—Survey of educational work—Chinese medical text-books—Training of Chinese nurses (and midwives) at Hongkong, Ningpo and Peking—Hospital activities at Canton, Amoy, Shanghai, Foochow, Swatow, Peking, Chefoo, Chinkiang, Tientsin, Newchwang, Wuchang, Wenchow, Shaowu, Soochow, Paotingfu, Hainan, Nanking, Chungking, Tsinanfu, Honan, Changteh, Manchuria and Hinghwa—New foundations at Siaokan and other stations.

Since Central Asia must be considered as one of the original, if not the original home of plague(770), it is to be expected on *a priori* grounds that this scourge had made inroads into China since time immemorial. Unfortunately, we cannot easily produce definite proof for this assumption. The Chinese annals abound in references to pestilences(771) but with few exceptions the chroniclers do not differentiate between the diseases met with. Treating the subject

(770) For information on this and related subjects see the publications of the Manchurian Plague Prevention Service, especially Wu Lien-teh, *The Original Home of Plague* (Japan. Med. World, Jan. 15, 1924; Transactions 5th Biennial Congress of the Far Eastern Assoc. Trop. Med., p. 286 and 1923-24 Service Reports, p. 178).

(771) C. A. Gordon, in the Appendix to his "Epitome of the Customs Medical Reports" gives a long list of such pestilences.

with our present knowledge of epidemics in China, we can rule out a number of these pestilences as having nothing to do with true plague—especially those following in the wake of war, famine, floods and other catastrophes, which were in all probability typhus and relapsing fever—diseases apparently rampant in China from the earliest times.

A smaller group of outbreaks, on the other hand, seem to have been plague visitations, either because they occurred simultaneously with established plague pandemics (e.g. the Black Death) or because they took place in regions where afterwards the existence of frequent plague epidemics or even endemicity was established (e.g. Mongolia, Shansi).

Our difficulties become greater as we approach regions now entirely free from plague but in the past suspected to have been endemic centres. This holds notably true of the Southern province of *Yunnan* (雲南), the first area we have to deal with when attempting to reconstruct the course of events leading to the 1894 outbreak at Canton and Hongkong. A number of "pestilences" is on record as occurring in Yunnan from A.D. 1165 onwards but no clue as to their character is procurable. Michoud (772), the first western-trained medical man to write on the subject, stated in 1894 that plague might have been present as far back as A.D. 1617. However, this story is only circumstantial and the Jesuit missionaries who are said to have come across the plague-like disease could not have been sent by the Emperor K'ang Hsi, whose reign began in 1662.

Of great interest is, however, the following account culled from a book of 31 pages by Hung Liang-chi (洪亮吉 alias Pei-chiang, 1736-1809) called "Poems by Pei-chiang" (北江詩話) who—referring to a contemporary of his wrote:—

In 1792 at Chaochow, Yunnan (雲南趙州) rats were seen in day-time. They vomited some blood and fell dead. Human beings inhaling the odour of the dead rats rapidly succumbed. Shih Tao-nan (師道南 -1765-1792), a native of Chaochow and son of the magistrate of Wangch'iang, Anhwei (安徽望江)—a young man of extraordinary talent—composed a poem Tien Yü Ch'ü (天恩集), a part of which entitled "Death of Rats" vividly described the calamity. The author himself died of plague almost immediately after (773).

The first modern observer was Rocher, an official of the Chinese Maritime Customs, who travelled extensively in Yunnan in the early 'seventies of the nineteenth century. An account of his plague ex-

(772) Customs Med. Rep. No. 48 (1894), p. 41.

(773) Kumagusu Minakata, *Nature*, 1899, p. 370; Yu Pai-t'ao (余伯陶), "Investigations on Plague" (鼠疫抉微), 1910; Wu Lien-teh, "Plague", 1936, p. 12.

periences was translated by Dr. Patrick Manson, who at once recognised their significance(774). Here we read that

according to the men of note of the various districts, the disease appears to have been imported from Burma. It is exceedingly difficult to say when it was first introduced. The learned say, and a great part of the population hold the same opinion, that the centre and east of the province was exempt from the plague until the outbreak of the rebellion (of the Mohammedans, 1855), while others assert that it had appeared in the extreme west near Talifu (大理府) several years before this date. It is extremely difficult to fix these dates, but supposing the last statement is correct, the disease must have passed over very lightly, seeing that neighbouring districts were not cognisant of its presence. Since the commencement of the civil war, however, it has spread over the whole province decimating the population.

Later, revisiting Yunnan, Rocher was led to believe that plague was first known in 1840(775), but long before that time it had existed in the western part of the province without prevailing epidemically(776). This opinion is endorsed by E. C. Baber who travelled with Grosvenor's Mission through Western Yunnan from Talifu to Tengyueh and collected information from Chinese officials as well as French priests, especially Father Fenouil. All these authorities, living in or near the valley of the Salween River, were well acquainted with the disease present among rats as well as man(777).

Another bit of information which should not be neglected is represented by the various superstitions connected with that region. Millott Severn, for instance, basing upon the information given to him by a Chinese practitioner (native of Yunnan), stated

that a time-honoured curse, one of the worst in the wide range of Yunnanese maledictions, is to call upon the gods to afflict one's enemy with Yang-tzu, the name by which plague is known in the local dialect.

Ram Lal Sircar alluded to the superstition

that the disease can never cross the Salween River (in an eastward direction), on account of the influence of some unknown deity presiding over that part of the country(778).

As proved by analogous experiences available in regard to other parts of the world, plague must have been present for a prolonged period in order to impress its stamp upon popular beliefs and tradi-

(774) Customs Med. Rep. No. 15 (1877-78), pp. 25-27.—Substantially the same information was embodied in Rocher's "La Province Chinoise du Yunnan" (Paris, 1879).

(775) According to the report of James A. Lowson, in charge of the Epidemic Hospital at Hongkong, plague was heard of in China for the first time in 1844 (see China Med. Miss. Jl., 1895, p. 139).

(776) Simpson, A Treatise on Plague, p. 54.

(777) Parliamentary Report, China, No. 3 (1878); China Med. Miss. Jl., 1894, p. 160 (Review of an article by Kingsmill in the Shanghai Mercury).

(778) Millott Severn, Jl. of State Med., 1925, p. 275; Ram Lal Sircar, Customs Med. Reports, 68th-80th Issues, p. 38.

tions. On the other hand, it must be kept in mind that the malaria-ridden valley of the Salween was—even when free from plague—a most unhealthy spot(777) so that not all data and superstitions necessarily point to this last-mentioned disease.

Nevertheless, it seems an irrefutable fact that plague was present in Western Yunnan before the Mohammedan rebellion though—as Michoud aptly pointed out—not causing great havoc before that civil war:—

All these statements—he wrote—go far to shroud in mystery the origin of the yang-tse-ping (瘴子病). It is difficult to believe in the local origin of the disease. Too many proofs of past prosperity abound in Yunnan, incompatible with the conditions of misery necessary to the development of such an infectious germ as that of the yang-tse-ping and therefore contradictory of any belief in the early existence and permanency of an epidemic, the consequences of which are fatal to the welfare and fortune of a country.

Even when reviewing the question with the aid of our present knowledge of plague, one must not only agree with Michoud's opinion that Yunnan was not an endemic area in the ordinary sense, but also with the statement that it is not clear how the infection reached the province on its eastward march. As we have seen, Rocher spoke in this connection of Burma, while other authors(779) believed it to have come from Thibet. All that appears certain is that Yunnan was reached by sparks of infection from the Central Asiatic endemic area, probably—as assumed by the Chinese officials—through caravans coming from the West. Though becoming entrenched among the rats in Western Yunnan and causing occasional outbreaks among humans, the fuel for a widespread conflagration was provided through the vicissitudes of the Mohammedan rebellion.

We will dwell in this connection upon the question whether or not an early spread took place from Yunnan before that civil war.

As already hinted at in Chapter V, a fatal epidemic at Canton in 1850 was considered with some suspicion. A record in the "Overland Friend of China" (May 23, 1850) said that

the city of Canton and the neighbouring towns and villages are affected by a malignant fever. It is commonly called typhus; some European physicians are of opinion that it is akin to the yellow fever of the West Indies; others think that it resembles the plague which desolated London two centuries ago. The disease is said to be fatal invariably, its victims linger three or four days, though in some instances they have died in twelve hours. More than one European doctor cheerfully tender their services, but the Chinese are obstinate in their adherence to old custom, old ignorant

(779) Michoud, l.c., Rennie, Brit. Med. Jl., 1894, p. 615: Mueller, Die Pest, p. 106.

quackery. The distemper has not made its appearance at the factories, and as it may arise from a want of cleanliness among the people, we are in hopes that it will not extend to Europeans.

Dyer Ball, who had preserved this record, also quoted the testimony of

a missionary lady resident for some time in the Pok-lo district of Canton Province, who says that in that district or in the Hakka country near there, the Chinese say they have had the plague several times, though not so fatal as in 1894, when 90% died as against 60-80% before.

It will be seen that the second bit of information rests totally upon hearsay and is quite devoid of value if we remember the ambiguity of Chinese terms used to designate epidemics in general as well as certain infectious diseases.

Nor does it seem likely that the 1850 Canton outbreak was one of plague, whose characteristic symptoms may only be overlooked if not sought for. In Canton some attention was directed to this point, but the above record is silent in regard to the "tokens" (buboes) which played so prominent a part in all accounts of the Great London Plague. To these more theoretical considerations comes a practical one: While the insidious beginning of plague in a locality might be overlooked until a big epidemic appeared as its first manifestation, it is quite unlikely that the infection, once introduced in a city like Canton, would have disappeared as quickly as it seemed to have come without leading to recurrent outbreaks due to entrenchment of infection among the rats. It would seem therefore that the 1850 Canton outbreak (evidently not one of typhus either) falls in the same class as the epidemics discussed in Chapter V.

In order to see how Canton was finally reached by plague we must return to Yunnan province, the capital of which (Yunnan-fu) was—according to the accounts of Catholic missionaries—invaded by the disease in 1866 when a large part of the population is said to have succumbed (776). The route of the infection during the years 1871-73 was described by Rocher, who stated that during this time plague epidemics

began about the commencement of the rice planting, that is to say, in May or June. Onwards from this time its ravages were severe wherever it passed. During the summer, which in Yunnan is the rainy season, although the epidemic still held its course yet it was of a milder character, but it is from the time the rain ceases to the end of the year that the disease is most active and deadly.

Among the localities invaded, according to Rocher's map (780), were *Szema* (思茅) and *Mengtsz* (蒙自) in the south. The first mentioned city received infection directly from Pu-erh (普洱) where

(780) This is reproduced together with Manson's report (774) as well as in Simpson's book.

Rocher placed the beginning of the 1871 outbreak. Further information in regard to Mengtsz became available in 1889, when a Customs house was established there. Commissioner Happer(781) wrote in the same year that the city suffered from plague for a number of years, the presence of fallow land in the neighbourhood being ascribed to its ravages. From later Customs Reports(782), it can be gathered that rats were involved and that the onset of the epidemics in May coincided with the time when the manure was removed.

The first Customs *Medical* Report dealing with the plague situation at Mengtsz is by Michoud from which we have quoted already (772). He said that on account of the numerous plague victims one-fifth part of the Mengtsz plain might be looked upon as a cemetery ground and added that in 1893, the disease not only made its usual ravages in Yunnan, but also extended to the south-east (Lungchow 龍州—and many towns in Kwangsi province). We will return to this point after having dealt with the pest at *Pakhoi*.

The foundation of this port in Southern Kwangtung dates back to 1852, when some Cantonese merchants settled there. The first medical man who reported on plague in Pakhoi seems to have been the British Naval Surgeon A. R. Lynch (H.M.S. Mosquito); the information procured by him in 1879 was embodied in Netten Radcliffe's Memorandum on the Progress of Levantine Plague(783) and is accompanied by a map showing the route presumably taken by the disease from Pakhoi to Yunnan!

An authentic account was given in 1882 by J. H. Lowry, Customs Medical Officer at Pakhoi(784), who stated that

the epidemic which I have observed in this district does not seem an old disease, as it occurred for the first time about 15 years ago, and since that has occurred at certain intervals.....

Information procurable in regard to early outbreaks may be briefly noted thus:—

1867 Presumable onset of plague. According to Dyer Ball it annually reappeared from that time onwards but was limited.

1871-77 Disease recurring each spring(785). In 1871 Mr. T. E. Cocker, Deputy Commissioner of Customs at Hongkong, noted a severe outbreak of the disease, accompanied by mortality not only among rats, but also among pigs and cattle(786). The next severe outbreak seems to have taken place in 1877(784).

(781) Quoted by Dyer Ball.

(782) Customs Decennial Reports, 1st Issue, p. 671, 2nd Issue, Vol. II, p. 463.

(783) Supplement to the 9th Annual Report of the Loc. Govt. Board, 1879-80.

(784) Customs Med. Rep. No. 24 (1882), p. 31.

(785) Ibidem, No. 28 (1884), p. 57.

(786) Simpson, l.c., p. 55.

- 1882 Again severe outbreak of the luen-tzu (瘧子) observed by Lowry. According to the Customs Decennial Report(787) it appeared first at Ch'in-chou city (60 miles to the West), then at Lien-chou (12 miles from Pakhoi) and finally in the city itself. There it commenced at the end of March and continued with lessening severity till the end of June. At Lien-chou it lasted until August. The number of victims in Pakhoi (25,000 population) is estimated by Lowry at 4-5,000. The epidemic was evidently preceded and accompanied by an epizootic ("In nearly every house where the disease broke out, the rats had been coming out of their holes and dying on the floors"). Some of these rodents were dissected by Lowry who noted congestion of the organs, and in some enlargement of the liver, but found nothing when examining microscopically.
- 1883 While Pakhoi itself was apparently free there was an outbreak at Lien-chou, which was worst during May and June and abated in July. Mortality unknown but probably considerable in the outskirts(788).
- 1884 Lowry records "an outbreak of luen-tzu, or bubonic plague, which made its appearance with the rising temperature of spring. The first case that came under my own observation was early in March, and I believe it was one of the first. The epidemic had entirely exhausted itself by the second week in June. As to the mortality, I do not believe there were more than 500 deaths. My statement is based on the weekly enquiries I had made at the coffin-shops. My total comes to 371, and I have been advised to allow another 100 for children buried without coffins. The Chinese put the mortality down at a much higher figure"(789).
- 1885 Only few cases at Lien-chou, none at Pakhoi(790).

Regarding the question as to how infection reached Pakhoi, it was stated by Lowry(791)

that prior to 1870 trade was carried on with the province of Yunnan but from the nature of the goods brought from that distant province they are not likely to carry the disease.

Simpson, dealing with this subject(792) admitted that the route from Yunnan to Pakhoi was long and difficult (there being about 3,000 li—ca. 1,000 E. miles—between Yunnanfu and Pakhoi, so that it took about 48 stages to travel from one to the other) and that the staple products of export from Yunnan were tin and opium while cotton goods were imported. However, he suspected that the disease was not spread through trade channels, arguing that

an epidemic of plague occurs in Yunnanfu in 1866, which decimates the population while they are in the midst of war, and in 1867 Pakhoi, one of the homes of returning troops from Yunnan, is attacked.

(787) 1st Issue, p. 645.

(788) Customs Med. Rep. No. 26 (1883), p. 36.

(789) Ibidem, No. 28 (1884), p. 55.

(790) Ibidem, No. 30 (1885), p. 10.

(791) Ibidem, No. 28 (1884), pp. 56-57.

(792) L.c., p. 56.

Simpson's claim certainly deserves notice but it must be kept in mind that early information on outbreaks between Yunnan and the coast is not lacking. Interesting evidence on this point was collected by Dr. Roderick J. J. Macdonald(793) who recorded:—

The late Bishop Chouzy, who had been resident in China for 40 years, assured me that in 1894, the year that plague appeared in Canton, and for years previously, there had annually been some plague in Nanning-fu and Kwaiun, on the West River. From enquiries made on the spot I am led to believe that some cases of bubonic plague have also occurred in Wuchow-fu annually since the year of the exceptionally high flood, which, it will be remembered, was 1884.....

Dr. G. R. Underwood(794) maintained that

a malady resembling plague, so the symptoms described would indicate, was prevalent in certain districts of Southern Kiangsi last autumn. Particulars were not to be had.

The nearer we come to the year 1894, the more manifest is this ominous tendency of the pest to spread in an Eastern direction. We have referred already to Michoud's statement that in 1893 the disease was not only rampant in Yunnan but extended to the South-East. It would seem, however, that such invasions took place earlier as well. Thoulon claimed(795) that a terrible epidemic broke out at Liencheng in 1880, when 1,000 out of 4,000 people died. In 1891 there was, according to him, a less severe epidemic at Lien-cheng and Longtcheou (Lungchow).

Sharp Deane(796) recorded that Lungchow was attacked in March, 1890, adding that the disease

having originated in Yunnan, passed through the town of Po-se and the prefectural cities of Nanning and T'ai-p'ing, in Kwangsi, and thence to Lungchow, also in Kwangsi.

This is corroborated by the statement of Bishop Chouzy.

Bruce Low(797) referred to an outbreak at Lungchow in 1889 and said that one year later the disease broke out at Wu-chu, (?) on the coast between Pakhoi and Canton, whilst in 1891 it appeared at Kao-chau, the prefecture adjoining Lien-chou, where thousands were reported to have died(798).

(793) Customs Med. Rep. No. 58 (1899), p. 39.

(794) Ibidem, No. 33 (1886-87), p. 20.

(795) Ibidem, No. 57 (1898-99), p. 18.

(796) Ibidem, No. 39 (1889-90), p. 15.

(797) Progress and Diffusion of Bubonic Plague from 1879-1898 (Appendix to the Loc. Governm. Board Reports), London 1900, p. 210.

(798) Kerr and his assistants presumably worked in this district (see Chapter IX, Canton).

In March—April, 1892, bubonic plague carried off a large number of people in a district near An-p'u about 100 miles east of Pakhoi. Sharp Deane(799) was informed by a local Catholic missionary

that bubonic plague is endemic in a small district near that place, and that isolated cases will be found there at any time of the year, but that during the early spring of some years the disease occurs as an epidemic and then the only chance of escape is to leave the district until after heavy rain has fallen.

Plague at Lungchow was again observed by Dr. Simond in 1893 and 1894. He believed that the disease had been imported from Yunnan into the military camp of Lien-cheng and had from there reached Lungchow, where the first victims were soldiers(800). In 1894 plague broke out at Pakhoi and vicinity after having been quiescent for about 10 years(801) and—lasting from April to June—caused considerable havoc.

It can be gathered from the above account that plague had more and more approached *Canton*, and it is not surprising therefore that this city was actually invaded by the disease early in 1894. As in the case of Pakhoi, it is impossible to state exactly how the infection reached Canton. Rennie(802) was inclined to think that it came from Pakhoi on the land route for,

if it came to Canton by sea it is rather remarkable that Hongkong, which is nearer to and in direct communication with Pakhoi, should have been visited by an outbreak nearly two months later than Canton.

As often happens in an outbreak of bubonic plague among a large community, it is not exactly known when the first case occurred. According to Dr. J. F. Wales(803)

the first notice of the outbreak appeared in a native newspaper dated March 1, which stated that the officials had ordered the cleansing of the streets because of the unusual sickness which so extensively prevailed.

This statement shows that the epidemic was fairly spread in the first half of March. In fact Dr. Mary Niles was already called on January 16, 1894, to see General Wong's daughter-in-law who was reported to be suffering from a "boil." Dr. Niles found a very painful swelling in the inguinal region, a temperature of 104.80

(799) Customs Med. No. 45 (1892-93), p. 10.

(800) Delay, *ibidem*, No. 50 (1895), pp. 38-39.

(801) Dyer Ball mentioned 40-50 deaths in 1891. For 1894 see Customs Decenn. Rep., 2nd Issue, Vol. II, p. 403.

(802) Customs Med. Rep. No. 48 (1894), p. 67.

(803) *Ibidem*, p. 29.

with a pulse of 160, and a petechial eruption. The patient eventually recovered(804).

The epidemic at Canton reached its height in May and had by the end of July almost disappeared, though sporadic cases were still met with. The number of victims is not exactly known. Several observers estimated the mortality to have been 100,000 in a population of about $1\frac{1}{2}$ million. Thus Wales was certainly conservative when he wrote:—

I have it on good authority that during the 3rd, 4th, 5th and 6th Chinese months 90,000 coffins were sold—probably 75% were for plague cases.

Reports as to the incidence in the vicinity of Canton were perhaps exaggerated. Again we may quote the testimony of Wales:—

The villages and country districts—apart, of course from Fatshan, Sheklung, Chantsun and such-like large towns, where, practically, like conditions to Canton obtain—appear, so far as can be learnt, to have been remarkably free from the disease. Reports were spread about the terrible outbreaks in the country, but these were not authenticated, and persons living there stated that very few cases occurred, save among fugitives from Hongkong and Canton. Dr. Kuehne, of the German Mission Hospital at Tungkun, states that over 200 plague patients came there from Hongkong. In spite of this importation, there was no outbreak of the plague nor fresh cases in that town.

That Hongkong, some 80 miles distant from Canton and in constant and most dense intercourse with it, should become infected, was inevitable. Here the disease appeared in May and lasted as long as in Canton. As Wales found

this coincidence is remarkable, for in Hongkong the most vigorous sanitary precautions were taken and enforced, whereas here (viz. in Canton) no means whatever appear to have been used to check its spread and progress(805).

To us nowadays it is evident that the measures taken at Hongkong, though seemingly adequate as far as they went(806) and perhaps materially restricting the mortality(807), could not exert any influence upon the length of the epidemic as they were not directed against the *fons et origo mali*, the rats. In fact it is curious to note that most of the foreign observers do not seem to have paid due attention to the mortality among these rodents preceding and accompanying the epidemics. Lowson, for instance, wrote in 1895 that

the question of the infection of rats previous to the epidemic being noted in human beings has been made too much of.

(804) China Med. Miss. Jl., 1894, p. 116.

(805) A similar statement was made by Kerr, China Med. Miss. Jl., 1894, p. 178.

(806) A good survey of them is given in the article of Millott Severn, Jl. of State Medicine, 1925, p. 274.

(807) The official figure of 2,550 deaths seems to have been below the mark.

The Chinese people were quicker to grasp the importance of rats, maintaining that these rodents brought the disease as the messengers of the devil and taking in some instances to flight when their dying announced the approaching evil (Rennie, 779). Dr. Niles(804) recorded that one of the Chinese officials at Canton offered to pay out of his own pocket ten cash for every dead rat brought to him and collected 35,252 in the course of a month.

If, however, it was left to observers in India to prove a few years later, not only the origin of the epidemics from rats but also the role of their infesting fleas, the foundation for the work was laid at Hongkong through the *discovery of the Bacillus pestis* independently by Kitasato and Yersin. The question as to which one of these two observers greater credit should be given has been the subject of considerable controversy. While it seems beyond the scope of our brief historical sketch to enter into this, it may be said without prejudice that we owe to Kitasato the earliest account of the organism and to Yersin its first detailed and accurate description.

Most laudable researches into the morbid anatomy of the disease were started by Kitasato's compatriot Aoyama. He soon contracted the infection himself but fortunately recovered.

A rather consoling feature is that the catastrophe of 1894 led to marked progress in public health work. A Sanitary Board had already been installed at Hongkong in 1883 but its activities were chiefly directed towards the scavenging of the city and the improvement of housing conditions. On the outbreak of the epidemic this was enlarged and its scope permanently extended to include anti-plague measures. Probably it was also due to the epidemic that a Medical Officer of Health was appointed at Hongkong from 1895 (Millott Severn—806).

The Tung Wah Hospital did its share in fighting the epidemic, suspect patients especially being sent to its wards. The methods of the Chinese practitioners in the treatment of plague totally failing (Kerr-805), the institution was again adversely criticised. This led the Governor, Sir Wm. Robinson, to appoint a Commission to enquire into the working and organisation of the hospital under J. H. Stewart Lockhart; one member of this Commission was Dr. Ho Kai (later Sir Ho Kai).

As can be gathered from the extremely interesting report of this Commission(425), a majority wisely adopted the principle of keeping the Tung Wah Hospital available for the treatment of

Chinese patients, suggesting at the same time a number of well-planned reforms. The most important of these (which was promptly acted on) was the appointment of a western-trained Chinese doctor to assist the Colonial Medical Officer in the supervision of the institution and keep the register of deaths. Gradually this led—as recommended by some of the commissioners—to the introduction of Western medical methods, so that soon the hospital consisted of two departments offering modern and old-style treatment respectively. With some exceptions (certain infectious diseases like plague and midwifery cases) the patients themselves could choose according to which standard they wanted to be treated, care being taken, however, to point out to those with surgical complaints the advantage of operative help (given at first in the Alice Memorial Hospital and its branches). With an impartiality honouring both Chinese and Westerners, annual statistics were published, showing the kind of diseases admitted and results attained with the two methods.

Special Medical Officers, limited to foreigners, were employed up to 1929, when Dr. M. Wong took up the post. And, if we also recall the share the institution has played in offering its clinical material to the Medical School, it may really be said that the activity of the Tung Wah Hospital is inspired by the lofty ideals of Sir Patrick Manson, as outlined in his inaugural speech at Hongkong.

When we recall that during the 1894 epidemic, even in this Colony considerable reluctance was evinced by the Chinese population to submit to treatment in the Government and Tung Wah Hospitals, it is not surprising that little progress was made at *Canton*. However, Kerr recorded that the failure of Chinese methods in treating plague patients made so great an impression that a temporary plague hospital was opened during the middle of the epidemic which was well ventilated and kept clean. Soon afterwards a permanent Chinese hospital was built in the city, to be run on the same principles as the reformed Tung Wah Hospital. Unfortunately the originator of this scheme died before it was completed so that Kerr doubted its final adoption. He pointed out, however, that eight drugstores were selling foreign medicines while as many as 100 Chinese physicians trained in the Missionary Hospital were engaged in practice in Canton and Kwangtung Province(808).

(808) Kerr, l.c.(805).—The Chinese *Fong Pin Hospital* was actually opened in Canton in 1896 (see *National Medical JI.*, 1925, p. 366).

Among the Chinese ports adopting *quarantine measures* against Canton and Hongkong—Swatow, Ningpo and Shanghai deserve special mention.

The measures adopted at *Swatow* comprised inspection of all steamers coming from Hongkong. A small number of plague cases, which were thus detected, were accommodated in a mat-shed hospital erected on the north bank of the harbour at a safe distance from town and port. A native practitioner was in charge under Customs Medical Officer Henry Layng, who himself carried out inspection.

An indirect beneficial result was that the steamship companies exercised good care in various ways not to take aboard plague-infected persons from Hongkong. Drawbacks were that quarantine was adopted with some delay and the programme could not comprise junk (and overland) traffic. In fact plague became manifest in Swatow in summer and autumn of 1894, when considerable rat mortality was noted together with a few human victims(809).

At *Ningpo* quarantine was established by the Taotai (Chinese Superintendent of Circuit) with the aid of the Customs Medical Officer(810).

Quarantine against Hongkong and Canton was declared in *Shanghai* in 1894 and again in 1896 and 1898. One year later (1899) a sanitary station was opened on Chung-pao-sha Island outside Woosung(811).

Some improvement was also introduced at *Newchwang* (South Manchuria) as a result of the 1899 plague epidemic. Customs Medical Officer Daly reported the presence of the epidemic soon after onset and submitted a programme of suitable measures. Unfortunately this was adopted after so much delay that the disease lingered until November (still followed in December by a limited pneumonic outbreak) and spread to neighbouring settlements. However, early notifications had been sent out to other ports where more energy was displayed(812).

This holds specially true of *Tientsin* where, at the instigation of Customs Commissioner Drew, the Consular body approached the Viceroy. Permission and funds were readily granted by the Chinese authorities to make it possible for the Customs Commissioner to

(809) Customs Med. Rep. No. 51 (1895-96), p. 94.

(810) Customs Decennial Rep., 2nd Issue, Vol. II, p. 61.

(811) Ibidem, Vol. I, p. 500.

(812) Customs Med. Rep. No. 58 (1899), p. 20 & 61 (1900-01), p. 1.

establish a quarantine station at Taku under a foreign medical officer. The first was Dr. Leslie, who was assisted by Dr. Kwan, and soon succeeded by Dr. Lowry. Sanitary and quarantine regulations were promulgated and a systematic inspection of vessels, including junks, from Newchwang was carried out. The result was quite satisfactory, the port retaining a clean bill of health as far as plague was concerned(813).

Progress in *public health work* was made during the period now under consideration in other directions as well. In 1898 Dr. Arthur Stanley was appointed as the first whole-time Medical Officer of the *Shanghai International Settlement*, taking over from Dr. Henderson(814). Noteworthy also is the completion in 1899 of the *Tientsin Waterworks* by a private company. Dr. Rennie Robertson, while satisfied with the arrangements of the plant and the moderate cost of the water, noted that this was unfit for drinking purposes until boiled and filtered(815).

The activities on behalf of the Chinese wounded at the time of the war with Japan (1894-5) also deserve consideration. We have seen how in the past the foreign practitioners in China and their native assistants eagerly availed themselves of opportunities for war work. Now, however, for the first time we meet with proper *Red Cross activities*.

At *Newchwang*, with the approval of the Chinese authorities, gained through the co-operation of the Customs Commissioner, a temporary Red Cross Hospital was opened in Chinese inns in December, 1894. This was under Dr. Dugald Christie and other physicians of the United Presbyterian Mission who had been constrained by the exigencies of war to leave their inland stations. Over a thousand cases were admitted, Christie's students taking a prominent part in the work(816).

As was to be expected, the active interest ever displayed by Viceroy Li Hung-chang towards western medical practice resulted in excellent provision for the wounded at *Tientsin*. A Red Cross Society, recognised by the Government, was formed which had the

(813) Dr. H. Rennie Robertson, Customs Med. Rep. No. 58 (1899), pp. 26-27.—The menace of plague from Newchwang as well as of cholera led in the years following to the establishment of a number of other quarantine stations, e.g. at Pagoda Anchorage, Dairen and Tsingtao (see Wu Lien-teh, Nat. Med. Jl., 1923, p. 1).

(814) Shanghai Munic. Health Rep. for 1898.

(815) Customs Med. Rep. No. 58 (1899), p. 24.

(816) Ibidem, No. 49 (1894-95), p. 2; Christie, China Med. Miss. Jl., 1896, p. 91, ibidem, 1895, p. 283.

support of Chinese and foreigners alike. The Viceroy placed a steamer at its disposal to make an expedition to Port Arthur and bring the Chinese wounded to Tientsin. This sailed in November, 1894, under Dr. B. C. Atterbury, accompanied by four other doctors including Surgeon-Major James (R.A.M.C.). Though politely received by the Japanese naval authorities, Dr. Atterbury was informed that the Japanese themselves took good care of all wounded and had to return to Tientsin without realizing his purpose(817).

Dr. Atterbury, accompanied by another member of the Society, however, proceeded to *Shan-hai-kwan* (山海關—north of Tientsin) to receive the wounded from the front and organise their further transport south. His work produced such a favourable impression upon the military authorities that several generals asked for foreign-trained medical men to be stationed at their camps and provided them with sufficient funds to attend the wounded and sick.

At the same time the Chinese Government sent Dr. Kin of the Viceroy's Hospital to the front, where he established a temporary base hospital for the wounded at *Kin-chow* (Chinchow) in premises placed at his disposal by the missionary doctor, Brander.

About 1,400 wounded reached Tientsin and were distributed in the following hospitals:—

Elizabeth Fisher Hospital f. Women

Dr. Benn, assisted by Dr. Edna Terry and Dr. Philip Leach of the U.S. Gunboat *Monocacy*;

Hospital for Women

Dr. Howard King;

London Miss. Hosp.

Dr. G. P. Smith;

Temporary Red Cross Hospital

Visiting Surgeon Dr. Frazer (818).

As already alluded to in the foregoing chapter, Red Cross work was also performed at *Chefoo* by Dr. Douthwaite. He recorded(819) having obtained buildings from General Sen where he hoisted the Red Cross flag and started to drill stretcher bearers. Later on he also received funds to buy drugs. Altogether 160 wounded were admitted and cared for by Dr. Douthwaite with the aid of Nurse Dobson (recently arrived from England) and some ship surgeons, especially Dr. MacNab, R.N. It is added that at *Wei-hai-wei* a Chinese military and naval hospital existed under Dr. Kirk.

(817) *China Med. Miss. J.*, 1894, p. 237.

(818) *Ibidem*, 1895, pp. 213, 217.

(819) *Ibidem*, p. 10.

Mention was also made(818) of the foundation of a Red Cross Society at *Shanghai* with Mrs. Anderson as prime mover, but no details are available.

With regard to outstanding events, mention must be made of the return to China of several *Chinese ladies who had graduated in medicine abroad*:

Miss Hū King-eng, born in 1865, was the daughter of the Rev. Hū Yong-mi of the Methodist Episcopal Church at Foochow and went to America in 1884. She began the study of Medicine at the Woman's Medical College of Philadelphia and after her graduation in 1894 continued to work for about a year in America. Returning to *Foochow* in 1895, she first joined the Mission hospital until she was made in 1899 the head of the Woolston Memorial Hospital in that city, where—helped by her sister—she taught students. Three of her pupils were later appointed Female Medical Officers in the Manchurian Plague Prevention Service. In 1898 she was sent together with Dr. Ida Kahn (see below) by Viceroy Li Hung-chang to London to represent China at the International Congress for Women(820).

Miss Shih Mei-yu, better known under the name of Mary Stone, also the daughter of a pastor in the Methodist Episcopal Church, and Miss Ida Kahn, a Chinese girl adopted when a few weeks old by Miss Gertrude Howe, were both trained first at the mission boarding school at Kiukiang. When Miss Howe returned to America in 1892 she took the two girls with her. Both passed most brilliantly the entrance examination into the Medical Department of Michigan University at Ann Arbor from where they graduated in 1896 after four years' study.

Drs. Kahn and Stone returned in the same year to *Kiukiang*, enthusiastically welcomed by the population who fired off 40,000 crackers. At once patients came to see them so that they had to open first a small dispensary, and later on the fine, modern-built Danforth Memorial Hospital.

Dr. Kahn, after a few years' work at Kiukiang was invited by Viceroy Chang Chih-tung to open a Medical School in Shanghai but preferred to start pioneer work at *Nanchang* (南昌 Kiangsi) in 1902. In the year 1908 she went again to America to study at the Northwestern University, Chicago, from where she graduated in 1910 with the degree of S.Sc. In the same year (1910) she acted as delegate to the Y.W.C.A. International Conference in Berlin and then went

(820) A Century of Prot. Miss., p. 465; Latourette l.c., p. 459 and personal information.

to London to study at the London School of Tropical Medicine. Returning to China, Dr. Kahn established in 1912 the Women's and Children's hospital at Nanchang, where she worked until her death in November 1931.

Dr. Stone was for a number of years (1902-20) in charge at Kiukiang but then went to Shanghai where she founded a self-supporting medical establishment known as *Bethel Mission*. This comprised a hospital with accommodation for over a hundred patients, two dispensaries in the city and a large training school for nurses. Dr. Stone's younger sister Phoebe, who had graduated at Johns Hopkins Medical School, joined the work at Kiukiang in 1908 and afterwards accompanied her sister to Shanghai. Here she died in May, 1930.

Dr. Zoh Fo Me (石福妹) graduated in 1896 from the Soochow Medical College and was appointed house physician and surgeon as well as superintendent of the Mary Black Woman's Hospital at Soochow. "Faithful, enthusiastic, and earnest, she literally wore herself out with hard work and died in 1908 of consumption" (Park) (821).

Finally, notice should be taken of the foundation in 1896 of the *Hongkong and China Branch of the British Medical Association* with Dr. J. A. Lowson (Government Civil Hospital) as President, Surgeon-Major S. Westcott, R.A.M.C., as Vice-president and Dr. J. C. Thomson (Alice Memorial Hospital) as Secretary and Treasurer. The newly-founded institution discussed the problem of plague without however coming to any conclusion of permanent value (822).

Among the *educational undertakings*, reorganised or started during the period now under discussion, the work at *Shanghai* deserves mention first. Here in January, 1896, an agreement was entered into between St. John's College (Jessfield) and Dr. Boone, whereby the then Medical School of St. Luke's became the *Medical Department of St. John's College*. The purpose now was to train physicians and surgeons of a higher grade in English; the course was one of four years, at the end of which a certificate (not a diploma) was granted to successful candidates.

The Faculty then organised comprised, besides Dr. Boone (Dean), Dr. W. L. Ludlow, who had joined the mission a year before,

(821) *China Med. Miss. Jl.*, 1896, p. 181, 1905, p. 223; *A Century of Prot. Miss.*, p. 466; Latourette, p. 459; Park, *China Med. Jl.*, 1909, p. 301, *ibidem*, 1930, p. 734 and personal information. The *Century of Prot. Miss.* speaks also of a Miss Li, a daughter of a pastor of the Hinghwa Mission, as graduating in Philadelphia. We possess no record as to her work in China.

(822) *China Med. Miss. Jl.*, 1896, p. 53.

and Mr. F. C. Cooper, a graduate in Pharmacy and Professor of Natural Sciences in the College. Rev. J. L. Rees, M.Sc., Dr. Mary J. Gates of the Woman's Hospital (1896-1900) and Dr. Lincoln (who joined in 1899) also took part in teaching the first reorganised class, while much assistance in lecturing and examining was given by Dr. Duncan Reid, a private practitioner.

The course of study was divided into two parts: the first two years the students lived at St. John's and were taught anatomy, physiology (both under Dr. Lincoln), chemistry, physics, materia medica (all three given by Prof. Cooper), physical diagnosis and microscopy including histology and pathology. The last two years of the curriculum they spent at St. Luke's (Shanghai) and were taught practice of medicine, surgery, obstetrics and other clinical subjects. The first class of four young men graduated in 1901 and consisted of Drs. T. K. M. Siao, afterwards a successful practitioner in Shanghai and one of the organisers of the National Medical Association; M. U. Kyong (now with the Shanghai-Nanking Railway, Changchow), N. Z. Woo and K. S. Peter Tso (both deceased) (823). We will deal with the further progress of the School, which continued to train several future Chinese medical leaders, in the next chapter.

Nanking. Dr. Stuart was transferred in 1896 to *Nanking* to take charge of the medical teaching and became, in the next year, President of the University in succession to Dr. John C. Ferguson.

As can be gathered from a statement published in 1897, a curriculum of four years had been adopted at Nanking with a preliminary course of one year for students who had not reached the standard required at the entrance examination. A fee of \$12 was charged for this, while the medical students had to pay \$25 annually during the first and second years and \$20 for the third and fourth (824).

Peking. The valuable educational endeavours of the Methodist Mission at *Peking* were put on a firmer basis in 1896, when a small group of physicians, both missionary and other, united for teaching purposes. This school was instrumental in educating some men who afterwards held important positions at Peking (825).

Of note was Dr. Ts'ao Yung-kuei, who graduated in the United States and worked under the Methodist Episcopal Mission at Peking

(823) China Med. Miss. Jl., 1900, p. 69, 1901, p. 24; China Med. Jl., 1909, p. 308, 1926, p. 754; personal information from Miss Anne Lamberton (May 21, 1931).

(824) China Med. Miss. Jl., 1897, p. 173; China Med. Jl., 1911, p. 243.

(825) China Med. Jl., 1926, pp. 528-29.

as teacher of anatomy in the Peking University. He was appointed Physician-in-Ordinary to Ambassador Chang Yin-huan sent to England to convey the congratulations of the Chinese Emperor and Empress-Dowager to Queen Victoria on the occasion of her jubilee, and accompanied his chief to Europe(826).

Dr. Robert Coltman, Jr., in charge of the Anting Gate Hospital in connection with the Presbyterian Church, gave in 1896 lectures on the Practice of Medicine to the students of the T'ung Wen College and also acted for some time as physician to Viceroy Li Hung-chang(827).

Soochow. We mentioned in the foregoing chapter that the *co-educational* Medical College at *Soochow* was opened in 1894. A new teaching enterprise began in that city when the Elizabeth Blake Hospital was opened in 1897. This establishment had wards for both male and female patients with a total capacity of 100 beds and was under Dr. J. R. Wilkinson of the Southern Presbyterian Mission. Three students were at first admitted. These as well as those after them (at one time twenty odd were enrolled simultaneously) were given a course extending over seven years, taking part at the same time in the labours of the hospital. It would seem that up to 1908, when the work was reorganised, only four students had graduated(828).

Chichow. A medical school in connection with the London Missionary Hospital at *Chichow* 175 miles S.W. of Tientsin (Dr. McFarlane) was started in 1896 with 3 pupils, one of them an assistant of several years' standing, a second a B.A. A curriculum of three years was adopted(829).

Further educational undertakings will be discussed together with the hospitals where they were started.

Canton. The progress made in school work at *Canton* has in part been dealt with already in the foregoing chapter. It may be added that—according to Dr. Kerr's 1896 report—one of the Chinese instructors at the Canton School was called to a professorship in the Tientsin Government Medical College. Two graduates successfully underwent an examination by the Medical Board at Honolulu and started in private practice there.

In 1897 it was resolved to free Dr. Kerr from the routine of the hospital (which was entrusted to Dr. Swan) so as to enable him to

(826) *China Med. Miss. Jl.*, 1897, p. 76, 1901, p. 1.

(827) *Ibidem*, 1896, pp. 161, 198, 1897, p. 85.

(828) *China Med. Miss. Jl.*, 1900, p. 207; Customs Decennial Reports, 2nd Issue, Vol. I, p. 552; *China Med. Jl.*, 1909, p. 321.

(829) *China Med. Miss. Jl.*, 1896, p. 161.

concentrate upon literary work and teaching; he continued to perform important operations. At the same time the curriculum of the school was prolonged to four years. The lack of a suitable college building was deplored in the report.

An important change took place in 1899 when Dr. Kerr left the Canton Hospital to take charge of the newly-opened asylum for the insane. He brought the male students of the medical class with him to finish their course of study there but had to leave the female students behind. As we shall see in the next chapter, special provision was soon made for the latter (830).

Foochow. Education at *Foochow* was also assiduously continued. As already discussed, Dr. Whitney had once more taken charge of the Ponasang Hospital, the actual conduct of which, however, was in the hands of his competent Chinese helpers. The training seems to have been restricted to Christian students of good standing, the object being to train medical evangelists. In an article devoted to the subject Dr. Whitney pointed out that satisfactory results were obtained under this policy. The certificated students received for the first quinquennium of their service with the Mission \$8 per mensem, during the second \$9, then \$10. Fuel and oil only were provided to the pupils under training.

Dr. Woodhull (whose place was temporarily taken in 1896 by Dr. Goddard) also carried on with her classes. Unfortunately the last surviving member of the first also died, but Dr. Woodhull reported with satisfaction upon Dr. Woo Nguok-ing of the second class, the wife of the accountant of the Telegraph Co., who became a successful practitioner. Of the four students graduating in 1900 one, Dr. Ling, remained in the hospital; two married and settled down to practice in villages, while the fourth assumed charge of the hospital and dispensary at *Ing-hok* (永福—40 miles from Foochow), left vacant when Dr. Goddard returned to America in 1899.

A large class of girls was also taught by Dr. Luella M. Masters of the Methodist Episcopal Mission, who left, however, in 1900 for *Ngu-cheng* (龍田).

Ichowfu. Serious educational efforts were also made by Dr. Johnson at *Ichowfu*. In a report published in 1896 he praised his assistant Yü Tsai-yü who had graduated 1½ years ago and was most useful, assisting in the dispensary and visiting patients in their

(830) *China Med. Miss. Jl.*, 1897, p. 191, 1898, p. 60, 1899, p. 51; *China Med. Jl.*, 1926, p. 776.

homes. Though his salary was only \$72 per annum and he received better offers, he proposed to stay on for one year at least and to take part in training a planned medical class.

Probably this class was not started before 1899. It is certain that in 1905 a class of eleven, taken in hand in 1899, finished schoolwork. It was proposed to issue diplomas to these pupils (who had been some time with Dr. Neal at Tsinanfu) only after they had spent a further practical year in the hospital(831).

Although substantial progress was thus made, the need for standardisation and centralisation of educational endeavours was keenly felt. This aspect was urged in an editorial published in the China Medical Missionary Journal in 1895(832). Soon afterwards(833) Dr. Beebe deplored the lack of uniformity and recommended that the Association should decide upon a standard of requirements and appoint a board of examiners—proposals which were seconded with some modifications by Dr. Cousland(834).

An excellent survey of the situation was given in 1897 by Dr. Neal(835) who had made an enquiry into the subject of medical education by sending out 160 circular letters.. Sixty of these were answered but twenty-one simply stated that no pupils were trained. Analysing the others Dr. Neal was struck by the pre-eminence of the work at Canton under Kerr and the smallness of classes in most stations. Including Hongkong there were only five which had more than ten students, while in the others the number of pupils varied from two to six.

Neal opined that

this would seem to indicate that in most instances, even where medical students are reported, the teaching consists in allowing the students to pick up what they can in daily association with the physician in charge and from more or less desultory reading of medical books, without any regular and systematic teaching.

In other words, that scarcely half a dozen places in China have arrived at the point where they can be really considered to be medical schools.

Another drawback was, in Dr. Neal's opinion, the scarcity of really well prepared candidates. Estimating that about 300 Chinese had already been trained in western medicine and 250-300 were then in hand, Dr. Neal summarised his material thus:—

(831) China Med. Miss. Jl., 1896, pp. 103, 161, 1897, p. 91, 1898, pp. 58, 60, 167, 1900, p. 304, 1902, p. 1, 1906, p. 142; A Century of Prot. Missions, p. 259.

(832) P. 20.

(833) Ibidem, p. 270.

(834) Ibidem, 1896, p. 271.

(835) Ibidem, 1897, p. 89.

Locality:	Physician:	Total No. trained:	No. in Miss. Employ:	No. in pr. pract.:	Men now in training:	Women now in training:	Total:	Years required:
Canton	Kerr	79	?	?	18	6	103	3 or 4
Tientsin (Viceroy's H.)	Houston	—	—	—	26	—	26	—
Soochow	Park	9	5	3	10	6	25	5
Hangchow	Main	12	7	5	8	3	23	5
Hongkong	Thomson	7	—	7	12	—	19	5
Foochow	Whitney	14	2	10	3	—	17	5
Isingchowfu	Watson	16	8	5*	0	0	16	—
Foochow	Masters	6	2	4	—	9	15	6
Mukden	Christie	9	2	7	6	—	15	5
Isinanfu †	Neal	10	3	7	5	—	15	4
Peking	Curtiss	4	2	2	9	—	13	4
Paotingfu	Atterbury	13	—	13	0	0	13	—
Foochow	Goddard	4‡	0	0	—	6	10	6
Nanking	Stuart	4	1	2§	5	—	9	5
Changchow	Fahmy	3	—	3	6	—	9	5
Chungking	McCartney	3	3	—	5	—	8	5
Siokhe	Otte	4	—	4	4	—	8	5
Kinhwa	Barchet	2	1	1	4	—	6	5
Kakchieh (Swatow) ...	Scott	3	3	—	3	—	6	4
Chaochowfu	Cousland	—	—	—	4	—	4	5
Engch'un.....	Cross	—	—	—	4	—	4	5
Pingtu	Randle	—	—	—	3	1	4	4
Chinchow	Brander	1	—	1	2	1	4	4
Chengt'u.....	Kilborn	—	—	—	3	—	3	4
Miscellaneous (15 places)		65	22	41	21	1	87	—
Totals		268	61	115	161	33	462	—

Remarks:

* 3 died.

† Dr. Johnson, Ichowfu, assisted in training of one class of five.

‡ All four died.

§ One died.

N.B.—It will be noted that—for lack of other information—a few educational undertakings mentioned in the above tabulation have not been discussed in the text. It may be added that work of the Presbyterian Church of England at Engch'un in Fukien Province was started in 1890 and in 1893 premises were secured outside the city for a hospital and dwelling house (A Century of Prot. Miss., p. 177).

Dr. Neal's complaint that most establishments trained apprentices rather than educated students was editorially upheld(836). At the same time it was maintained that not only the medical missionaries but the whole profession ought to take part in the work, and that Chinese tutors and demonstrators were indispensable.

Soon afterwards Dr. Cousland pointed out(837) with much reason that however much the system then adopted was at fault it was better than to refrain altogether from educational work. He proposed the institution of an Educational Committee which should draw up schemes for two grades of undertakings: (a) Regular medical schools; (b) Such connected with hospitals.

This committee might at the same time arrange for the preparation of an authentic series of text-books. A special translator to be employed for this purpose might at the same time be the editor of a medical journal in Chinese(838).

The establishment of a Central Medical School at Nanking was discussed at the General Conference of the Methodists in November 1899. The meeting did not propose to realise the plan but decided instead to foster for the time being the work in connection with the Peking and Nanking Universities as well as that of the Anglo-Chinese College at Foochow(839).

As shown by Cousland's proposals, the supply of proper *Chinese text-books* continued to be inadequate. Among the few works published during the period now under contemplation we notice, besides Kerr's and Wan Tsun-mo's Vocabularies (already discussed in the preceding chapter):

- (a) Translation of the Text-book of Ophthalmology by Norris and Oliver, made by Dr. J. B. Neal. According to a reviewer(840) Chinese teachers and students found this "difficult to understand"—the fault lying principally with the copyist who added unnecessary characters.
- (b) Translation of Remsen's Chemistry by Dr. Neal.
- (c) Translation of Steele's Popular Chemistry by Ino. C. Ferguson, R.A. and Li Sing-yuan.

Both works on chemistry were favourably reviewed in the *China Medical Missionary Journal*(841).

(836) *Ibidem*, p. 173.

(837) *Ibidem*, p. 214.

(838) Dr. Cousland (as well as Dr. Seymour of Tengchowfu) had recommended such a Journal in 1896 (*China Med. Miss. Jl.*, pp. 168, 281), Dr. Whitney in his Presidential Address (*ibidem*, 1897, p. 1), fully endorsed the proposal made by him earlier.

(839) *China Med. Miss. Jl.*, 1900, p. 127.

(840) *Ibidem*, 1896, p. 80.

(841) 1896, p. 268, 1897, p. 82.—According to the *Century of Prot. Missions* (p. 266) a *Primary Physiology* by Dr. Whitney appeared in 1896 (?).

Some progress was made as well in the *training of Chinese nurses*. The 1895 Report of the Alice Memorial Hospital in *Hong-kong* mentioned that in the wards for women there were under Mrs. Stevens one trained Chinese nurse and two pupils(842).

Ningpo. A praiseworthy attempt to train *midwives* was started in 1899 by Dr. Smyth of *Ningpo*. He reported to have then begun with a class of 11 middle-aged women (presumably old-style midwives) to whom lectures were delivered twice weekly and practical instruction given as opportunities arose. This was facilitated by the opening at about the same time of a hospital for women and children with 23 beds.

It was proposed to train the pupils for one year and then to issue certificates to those successfully passing an examination(843).

An editorial in the *Journal*(844) bestowed praise upon this efficient scheme and urged imitation.

Peking. About the same time a class to teach nursing and dispensing was started by Dr. Lillie E. V. Saville of the London Missionary Society at *Peking*. First arriving in January, 1897, she had been constrained by ill-health to retire to England in the same spring but made a new start with a dispensary in 1899. It would seem that Dr. Saville gave also more complete training to a few of her pupils. A 1903 report mentions that Mrs. Ch'ing, her senior student, acted most capably as her assistant(845).

Turning now to a contemplation of *hospital activities*, it must first be stated that the question of *charges to the patients* continued to be voluminously discussed in the journal, most of the writers being in favour of charging something(846).

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- (842) *China Med. Miss. Jl.*, 1896, p. 161.—It is interesting to note that according to the same report "eleven students of the College of Medicine for Chinese are going through a sort of apprenticeship to the two hospitals, the apprenticeship in each case being for a period of five years, running parallel with the minimum curriculum of five years of medical study required by the College." These pupils lived in the hospitals and took charge in turns of different duties. Thus they accompanied the house-surgeons attending outside obstetrical cases.
- (843) *China Med. Miss. Jl.*, 1900, pp. 196, 204.—Dr. J. F. Molyneux (*Customs Med. Rep. No. 50—1895—p. 29*) stated that a hospital for women and children with 35 beds had been opened at Ningpo in 1895 already.
- (844) 1901, p. 221.
- (845) *China Med. Miss. Jl.*, 1900, p. 135, 1903, p. 67, *China Med. Jl.*, 1910, p. 423.—From a statement on the Union Medical College for Women at Peking, published in the *China Medical Journal* for 1909 (p. 334) it appears that early endeavours to train nurses were also made by Dr. Gloss of the Methodist Episcopal Mission.
- (846) Whitney, *China Med. Miss. Jl.*, 1894, p. 93, Atterbury, *ibidem*, p. 120, Stuart, *ibidem*, p. 128, Randle, 1899, p. 13.

Canton. Supplementing the information already given in regard to *Canton*, notice must first be taken of the good progress of the work for women. Numerous female patients, particularly obstetrical cases, were attended in their own homes. The first Caesarian section was performed in the hospital in 1892 (followed in 1897 by the first operation for appendicitis).

In 1895 Dr. Ruth C. Bliss arrived to be associated with Dr. Mary Niles.

The work at the *out-stations* was vigorously continued, the 1897 Report mentioning the following:

Lienchow	Dr. Machle.
Sam-kong	Dr. Eleanor Chesnut.
Dispensaries in Sze-pai-lau and 15th Street, Canton.	Dr. Fulton.
Dispensary at Fati	Mrs. Dr. Boggs.
Kwong-ning and Shiu-hing	Dr. Graves.
Wai-chau	Dr. Kuehne.
Itinerating	Dr. Hager.

In the next year, however, it was resolved to cut off the appropriations for most of the out-stations in order to benefit the Central Hospital at Canton. Nevertheless the work was carried on in at least some of them. Thus Dr. Chesnut opened in 1899 a hospital for women and children at Lienchow (847).

The dispensary work of the Woman's Missionary Association of the United Brethren in Christ, started in 1891 by Dr. S. Lavinia Halverson (joined in 1892 by Dr. Regina Bigler), was continued, being reinforced in 1897 by the arrival of the Rev. H. K. Shumaker, M.D. and in 1898 by Mrs. Ruth McConn Thomson (followed in 1902 by Dr. O. S. Townsend) (848).

Amoy. On his return to China in 1897, Dr. Otte began the erection of "Hope Hospital" at *Amoy*, on the small foreign residential island of Kulangsu (鼓浪嶼) with funds collected during his furlough. The establishment, possessing 7 wards for 45 male patients and four for 25 women, was opened in 1898. In connection with it was a dispensary at Tekchiu-kha (竹樹脚) in the city. A special hospital for women (Wilhelmina Hospital) was added in March, 1899. This was not the property of the Reformed Church Mission but was permanently loaned to it, while its expenses were defrayed by donations from the Netherlands. The Hope Hospital soon became self-supporting.

(847) *China Med. Miss. J.*, 1896, p. 95, 1898, p. 60, 1899, p. 51, 1900, p. 123, 1902, p. 211; Cadbury and Jones, *l.c.*, p. 148.

(848) *A Century of Prot. Miss.*, p. 530.

Dr. Otte's promising work at Siokhe could not be continued, because of lack of resident physicians. However, he took his students with him to Amoy and their training continued to be a marked feature of the work, both men and women being taken(849). Dr. Otte died prematurely in 1910 of pneumonic plague caught from a patient whom he attended at home.

Shanghai. To supplement the information in regard to *Shanghai*, it may be stated that in 1897 the Victoria Nursing Home was presented to the Municipality as a gift to commemorate the Diamond Jubilee of Queen Victoria. It was destined to serve for the hospitalization of well-to-do patients who could choose their own medical attendants(850).

Mr. J. D. Chang, founder and for many years manager of the private Shanghai Dispensary (drug store), was signally honoured in 1896 when he received a gold medal and a testimonial from Viceroy Li Hung-chang(851).

Foochow. In *Foochow* a large Chinese house was secured by the Church of England Zenana Missionary Society and adapted as a hospital for women and children. Since no foreign physician was available, a dispensary was opened in September, 1899, under a Chinese doctor. It soon became popular(852).

Swatow. Dr. Josephine May Bixby of the American Baptist Missionary Union arrived at *Swatow* in autumn 1894, but left after about a year to take charge at *Kiehyang* (揭陽, about fifty miles west from Swatow), formerly an out-station of her mission. Here she began in 1899 the training of medical students. Carrying on for several years, she died in 1907 in America, whither she had been sent to recuperate her health(853).

The Chinese of Swatow, always willing to assist foreign medical undertakings(854), contributed \$1,500 in 1894 to the English Presbyterian Mission towards the cost of a ward for women(855).

(849) *China Med. Miss. Jl.*, 1900, pp. 222, 287; *Customs Dec. Reports*, 3rd Issue, Vol. II, p. 114; *A Century of Prot. Miss.*, pp. 376-377.

(850) *Hawks Pott, l.c.*, p. 130; 1930 *Directory of the Nat. Med. Assoc.*, Shanghai, p. 71.

(851) *China Med. Miss. Jl.*, 1896, p. 176.

(852) *A Cent. of Prot. Miss.*, pp. 55-56.

(853) *China Med. Miss. Jl.*, 1904, p. 155; *China Med. Jl.*, 1908, p. 265.

(854) Dr. Cousland recorded, e.g., in 1887 that some merchants were giving rice and cash tickets to his hospital which could be exchanged for goods in their shops (*China Med. Miss. Jl.*, 1888, p. 145).

(855) *Ibidem*, 1894, p. 68.

Peking. Dr. Gloss, whose arrival in *Peking* was announced in the previous chapter, opened in 1895, with the aid of a bequest (\$10,000) from Mrs. Elizabeth Sleeper Davis, a hospital named in honour of the donor. By 1897 the institution had become almost self-supporting, it being from that time onwards the policy of all missionary medical undertakings in Peking to make certain charges to their patients(856).

Chefoo. A department for women was opened in *Chefoo* in 1897 under Mrs. McOwan in connection with the establishment of the China Inland Mission(510).

Chinkiang. The China Inland Mission, which had stationed a medical missionary at *Chinkiang* in 1892, built a hospital in 1898. This establishment was by 1901 under Dr. Cox and had an average of 60 in-patients and 4,000 out-patients per annum. A small dispensary was also started at Yangchow on the other side of the Yang-tse River(857).

Tientsin. Dr. Frazer started in the autumn of 1896 a daily dispensary for students of the Imperial University, *Tientsin*, whose health had been by no means good during the preceding summer.

The British community, to celebrate the jubilee of Queen Victoria, began in 1897 the erection of a community hospital and nursing institute which was completed by 1899. It consisted originally of four private wards and one larger one for eight beds together with a dispensary(858).

Newchwang. At *Newchwang* a Chinese hospital, erected mainly with the aid of foreign contributions, was opened in 1897 and placed under Dr. de Burgh Daly(859). After his retirement in 1915, Dr. W. Phillips, F.R.C.S., succeeded.

Wuchang. St. Peter's Hospital, an up-to-date institution, was built in 1894 by the American Episcopal Mission at *Wuchang* on property adjoining the compound of Boone University.

Dr. C. J. Davenport of the London Missionary Society, who returned from furlough in 1895, was transferred to Wuchang where he continued until 1904 in a properly managed hospital possessing

(856) Ibidem, 1903, p. 67 and 1930 Directory of the Nat. Med. Assoc., Peking, p. 36.

(857) Customs Decennial Reports, 2nd Issue, Vol. I, p. 461.—The same report stated that the American Presbyterians (South) who started work in the station in 1887, had by 1901 two dispensaries.

(858) Customs Med. Rep. No. 54 (1897), p. 28 & 58 (1899), p. 24; China Med. Miss. J., 1895, p. 254.

(859) Customs Decenn. Rep., 2nd Issue, Vol. I, p. 19.

bathing facilities, hospital clothes for the patients and similar improvements(860).

Wenchow. As gathered from Chapter VII, Dr. Douthwaite had for a few years worked at *Wenchow*. Activities in this station were resumed when towards the end of January, 1894, Dr. Alfred Hogg of the United Methodist Free Church Mission arrived. He opened a hospital in 1898; two students were in training(861).

Shaowu. Work for women was commenced at *Shaowu* in 1900, one year after the arrival of Dr. Lucy P. Bement, American Board Mission. Assisted by her sister Frances K., Dr. Bement remained for many years the only woman physician among a population of two million people(862).

Soochow. Referring some events of lesser importance to the chronological table appended at the end of this volume, we now take record of the opening of the Tooker Memorial Hospital for Women and Children at *Soochow* in 1899. This undertaking of the American Presbyterian Church (North) was in charge of Drs. Mary A. Ayer and Frances F. Cattell(863).

Paotingfu. Dr. C. V. R. Hodge of the same Mission (American Presbyterian) came to *Paotingfu* in the year 1899 to work jointly with Dr. George Yardley Taylor who—PERIOD A.D. China in 1887—had first been with Dr. Atterbury at Peking but had moved in 1893 to Paotingfu. As we shall see, the station suffered grievously during the Boxer Rising, both medical missionaries being killed(864).

Hainan. The hospital of the American Presbyterian Mission at Kiungchow, Hainan, was transferred in 1897 to *Hoühow*, 4 miles distant. At the same time an establishment was opened at *Nodoa*(865).

Nanking. Dr. Daisy Macklin arrived in 1896 under the Foreign Christian Missionary Society to take charge of the medical work for women in connection with the Drum Tower Hospital and dispensaries of Dr. Macklin at *Nanking* but returned in 1900, being unable to stand the climate(866).

(860) China Med. Miss. Jl., 1898, p. 64; China Med. Jl., 1919, p. 72, 1926, p. 933.

(861) China Med. Miss. Jl., 1899, p. 46; Customs Med. Rep., No. 47 (1893-94), p. 14 (Dr. Lowry).

(862) A Century of Prot. Miss., pp. 259, 264; China Med. Jl., 1923, p. 349.

(863) China Med. Miss. Jl., 1900, p. 58.

(864) Ibidem, 1901, p. 48.

(865) A Century of Prot. Miss., p. 387; Customs Dec. Reports, 3rd Issue, Vol. II, p. 247.

(866) A Century of Prot. Miss., p. 353.

Chungking. As mentioned, the laudable activities of the London Missionary Society at *Chungking* came to a standstill when Dr. Davenport went on leave in 1894. Permanent work was resumed in 1896 when Dr. Richard Wolfendale arrived; he opened in 1898 a new hospital with 80 beds(867).

Tsinanfu. At *Tsinanfu* work for women seems to have been commenced in 1895 as a branch to the hospital for men and was under the charge of a Chinese female assistant. In 1899 a proper hospital for women was opened under the American Presbyterian Mission and entrusted to Dr. Mary L. Burnham(868).

Honan. The Canadian Presbyterian Church Mission in *Honan* was reinforced during the years 1894-1900 by four medical workers, the Rev. J. Menzies and Drs. Jeannie Isabelle Dow (arrived in 1895 to work at first under Dr. Wm. McClure at Ch'uwang), O. C. Leslie and Margaret S. Wallace.

Changteh. Work at *Changteh* (Hunan) was commenced in March, 1899, by Dr. O. T. Logan of the Cumberland Presbyterian China Mission (American) who was forced, however, by serious illness to return home temporarily towards the end of the same year. The Rev. Wm. Kelly, M.D., arrived in autumn 1899 and carried on until compelled to leave on account of the Boxer troubles(869).

Manchuria. In the year 1896 the first medical women of the United Free Church of Scotland Mission arrived in *Manchuria*. They took charge of the work for their sex at Mukden and Liaoyang and carried on independently at Ashiho and Kaiyuan (開原). Special hospitals for women were opened at Mukden and Liaoyang in 1897(870).

Hinghwa. A hospital in *Hinghwa* (Fukien Province) was built in 1898 or 1899, under Dr. Taylor, one of whose students died during the bubonic plague epidemic then prevailing in the city(871).

The most important of the *new medical undertakings* founded during the period now under review was the work instituted in 1894 by the London Missionary Society at *Siaokan* (孝感), 45 miles north of Hankow. Here a small leprosarium was opened in April of the following year through the initiative of the Rev. Griffith John, originally with an accommodation for 16 patients. In 1897

(867) China Med. Miss. Jl., 1898, p. 165, 1900, pp. 222, 238, 1903, p. 20.

(868) Ibidem, 1898, p. 55, 1900, p. 70.

(869) Ibidem, 1900, p. 299; A Century of Prot. Miss., p. 244, 406; China Med. Jl., 1927, p. 392.

(870) A Century of Prot. Miss., p. 216; 1930 Directory of Nat. Med. Assoc., Med. Institutions, pp. 21, 65.

(871) China Med. Miss. Jl., 1898, p. 167.

Dr. Walton was in charge and 24 lepers could be admitted. In 1899 Dr. Henry Fowler came out. Soon afterwards he left on account of the Boxer troubles, but he had won the appreciation of the people to such an extent that on his return he was presented by the gentry with a piece of ground for an extension of the leper refuge. During the 20 years of his activity there he was able to enlarge the establishment to harbour 150 patients. Leaving China on furlough in 1920 he took up the post of Honorary Medical Adviser to the Mission to Lepers, and later returned to China to assist in this work, establishing his headquarters at Shanghai(872).

Kiating. Medical work of the Canadian Methodist Mission in West China at *Kiating* (嘉定) seems to have been commenced as soon as the station was opened in 1894. When the missionaries again occupied it after the 1895 riots, the erection of a hospital was begun and completed in 1897. It was taken over in 1902 by Dr. C. W. Service(873).

Pingtu. As can be gathered from Neal's list, some pupils were trained by the Rev. H. A. Randle, M.D. of the Southern Baptist Convention at *Pingtu* (平度) in Shantung, who came out in 1894 but continued for four years only, retiring in 1898(874).

Kinhwa. Dr. S. P. Barchet opened in 1894 on behalf of the American Baptist Missionary Union a hospital at *Kinhwa* (金華), 75 miles S.W. of Hangchow and trained pupils (Neal). This activity was interrupted by the Boxer troubles, Dr. Barchet afterwards joining the American Consular Service(875).

Honan. In the year 1895 *Chengchowfu* (鄭州府) and *Taikang* (太康) in Honan were both opened for medical work by Dr. Howard Taylor of the China Inland Mission(876).

Foochow District. Miss Marion Hook of the Church of England Zenana Missionary Society who had arrived in China in the autumn of 1892, opened in 1896 a small dispensary at *Lo-yuan* (羅源) in Foochow prefecture, followed a few years after (?1898) by a similar establishment at *Sa-yong* (西洋) in the same district, presided over by Miss E. Baker(877).

(872) *China Med. Miss. Jl.*, 1896, p. 161, 1898, p. 58, 1901, p. 226; *China Med. Jl.*, 1926, p. 1028, 1930, pp. 745, 799.

(873) *A Century of Prot. Miss.*, pp. 119, 123.

(874) *Ibidem*, p. 327.

(875) *Ibidem*, p. 338.

(876) *Ibidem*, p. 141.

(877) *Ibidem*, pp. 52-55.—It would seem that Miss Hook was qualified as a nurse only (*ibidem*, p. 59).

Anking. The American Church Mission started with medical work under Dr. Merrins at *Gankin* (Anking—安慶) in Anhwei in 1896, carrying it on continuously from 1899 onwards, at first apparently in a dispensary(878).

Luchowfu. *Luchowfu* (廬州府) in the same province, the ancestral home of the Li Hung-chang family, had been occasionally visited by members of the Foreign Christian Missionary Society since 1892—first by Dr. Macklin, then by Dr. James Butchart. The latter made his residence there in 1897. A first-class foreign hospital was eventually built(879).

Mengtsz. The post of a medical officer to the French Consulate at *Mengtsz* was created in 1898 and first occupied by Dr. Reygondaud until the Boxer troubles forced the Europeans to leave for Tong-king(880).

Futsing. About the same time meritorious work was started by Dr. Mabel C. Poulter, with whose endeavours to train midwives at *Futsing* (or Hok-chiang—福清—in Fukien Province) we will deal in the next chapter(881).

Luho. Dr. M. Isabella French of the American Friends Mission came out in 1897 and after a year took charge at *Luho* (六合), a town about twenty-five miles distant from Nanking. This, like many other stations, was temporarily relinquished in 1900(882).

Wuchow. Though the port of *Wuchow* was opened to foreign commerce in 1897, the first medical establishment to commence work after that time was the Chinese Hospital of Extensive Benevolence (廣仁醫院), built by subscriptions at a cost of about \$4,000. This institution which was harshly criticised by Customs Medical Officer Macdonald in his 1898 report, had at first few patients and even showed some signs of decay. However, in 1900 things began to look much better though treatment continued to be on old-fashioned lines.

Free dispensaries were opened in the city by the American Baptists (South) in 1898 and soon afterwards by the Wesleyans. The former was at first under a former student of the Canton

(878) Ibidem, p. 305; Encyclop. Sinica, p. 146.—According to Thomson's list (529) Dr. G. A. Cox of the China Inland Mission had started work at Gank'ing—probably identical with the above mentioned, variously romanised city—in 1888.

(879) A Century of Prot. Miss., p. 351.

(880) Customs Med. Rep. No. 66 (1903), p. 11.

(881) China Med. Jl. 1921, p. 331.

(882) A Century of Prot. Miss., p. 528.

Hospital, since 1899 under Dr. Thos. McCloy. The Wesleyan work was taken care of by Dr. Macdonald(883).

Hao-shih. At *Hao-shih* a hospital was set up under the auspices of the London Missionary Society in a Chinese house. This was replaced in 1902 by a newly-built establishment(884).

Chuchow. Before Dr. Elliot I. Osgood came to *Chuchow* (滁州) (35 miles from Nanking) in 1899, the lay workers of the Foreign Christian Missionary Society had for some years given out simple remedies and established a sort of dispensary. Dr. Osgood himself had to work at first in the little thatched-roofed chapel of the mission(885).

Sianfu. Dr. J. A. C. Smith of the Baptist Missionary Society arrived at *Sianfu* (Hsianfu—西安府) in Shensi in 1899 but his activities were soon interrupted by the Boxer Rising(886).

Huchow. Medical work of the American Baptist Missionary Union at *Huchow* (湖州) in Chekiang Province was started in 1899 with the coming of the Rev. M.D. Eubank, M.D.(887).

Taichow. The beginning of the activities of Dr. J. A. Anderson and his wife (also a medical graduate) of the China Inland Mission at *Taichow* (台州 in Chekiang Province) goes back to the period now under contemplation. Both continued to work for many years, gaining the affection and support of the population(888).

(883) Customs Med. Rep. No. 56 (1898), p. 25, 57 (1898-99), p. 15, 58 (1899), p. 53, 60 (1900), p. 31; Customs Decennial Reports, 2nd Issue, Vol. II, p. 333; China Med. Jl., 1924, p. 424.

(884) China Med. Miss. Jl., 1903, p. 123.—This is probably identical with Tsao-shih in the Hankow district, mentioned in the records of the London Missionary Society (A Century of Prot. Miss., pp. 5, 10). Here the work was later on under Dr. Wills (p. 21).

(885) A Century of Prot. Miss., pp. 347-48; China Med. Jl., 1911, p. 413.

(886) A Century of Prot. Miss., p. 85; China Med. Jl., 1927, p. 390; Latourette, l.c., p. 653.

(887) A Cent. of Prot. Miss., p. 339.

(888) China Med. Jl., 1919, p. 98.

CHAPTER XI

PERIOD 1900-1910

FORMATION OF PROPER UNION MEDICAL SCHOOLS AND SYSTEMATIC TRAINING OF NURSES

Boxer uprising—Foreign Military Hospitals at Peking now partly existing as charitable undertakings—Problems of medical education—Hackett Medical College for Women—Hankow Union Medical College—Army Medical College—Soochow medical schools—Aurora University at Shanghai—South China Medical College and Pennsylvania Medical School at Canton—Peking Medical College—Union Medical College at Peking—St. John's University Medical School at Shanghai—Boone Medical School at Wuchang—German Medical School at Shanghai—Peking Union Medical College for Women—Medical classes at Soochow—East China Union Medical College at Nanking—Canton Kung Yee Medical College—Union Medical College in connection with Shantung Christian University—Medical classes at Taichowfu and Lienchow—Steps towards a uniform nomenclature—Chinese medical text-books and journals—Training of nurses (and midwives) at Shanghai, Canton, Hankow, Chungking, Peking, Tientsin, Hangchow, Anking, Nanking, Futsing and Foochow—Foundation and history of Nurses' Association of China—Activities of the China Medical Missionary Association—Tsinanfu Institute—Campaign against the opium evil—Chinese Public Health work—Min Cheng Pu Hospitals—Medical activities in connection with the railways—Red Cross work during the Russo-Japanese war—Progress in existent hospitals—New medical undertakings.

At the beginning of the period which we now approach, western medical work in China came to an almost complete standstill due to the Boxer uprising, which was the result of peculiar conditions that do not obtain any more. We therefore propose not to dwell upon these sad memories except where they are essential for the purposes of our history. Suffice it to say that this movement led not only to the temporary closing of most missionary undertakings (except in a few sea-ports) and the destruction of quite a number of hospitals, but even to the killing of four medical missionaries. These were:—

Dr. Geo. Yardley Taylor	Amer. Presb. Mission	Came to China 1887, worked first with Dr. Atterbury at Peking, last few years at Pao-tingfu.
Dr. Millar Wilson	China Inland Mission	Came to China in 1891. worked first at Sheo-yang-hsien, then Ping-yangfu, Shansi.
Dr. A. E. Lovitt	China Inland Mission	Came to China in 1897. Worked at Taiyuanfu.
C. V. R. Hodge	Amer. Presb. Mission	Came to China in 1899. Worked at Pao-tingfu (889).

Deplorable as these losses were, the following pages will show that the interruption caused by the Boxer troubles was only temporary, the work at or near most stations being resumed within the next few years with redoubled energy and success. The indemnities paid by the Chinese Government for property destroyed were used to replace the former hospitals, often housed in Chinese-style buildings, by more up-to-date plants for which—as already pointed out—a crying need existed. The continued need for improvements in this direction can be gauged from an editorial appearing in the *China Medical Missionary Journal*, 1901 (890) which emphasised the necessity of cleanliness in the hospitals!

As before, during military operations aid was given by the military surgeons to the civilian population. During the siege of Peking, an *International Hospital* was organised in the capital which was in charge of Dr. Poole of the British Legation and Dr. Velde of the German Legation (891). Soon afterwards provision for treating Chinese sick was made by the British, their army medical officers to whom the district outside the Hatamen was allotted, showing from the first their readiness to treat the poor of that neighbourhood. This work soon increased so much that it became necessary to secure special accommodation. A small temple near the Gate was procured and on this site the *British Charitable Hospital* continues to exist up to this day, being housed in modest Chinese buildings. When the military occupation ended it came under British medical practitioners, of whom special mention must be made of Dr. Geo. Douglas Gray (M.D. Edinburgh), Medical Officer to H.M. Legation. In fact it was popularly known as “Dr. Gray’s Hospital”, showing what confidence and esteem that excellent physician enjoyed (892).

A second dispensary opened by the British soon passed into the hands of the Church of England Mission. Until 1906 the work was

(889) *China Med. Miss. Jl.*, 1901, p. 48.

(890) P. 156.

(891) *China Med. Miss. Jl.*, 1901, p. 1.

(892) Brayton Barff, l.c., 1930 Directory of the National Med. Assoc., Peiping, p. 44.

carried on by Miss Lambert, assisted by Drs. Poole and later on Gray; then Dr. Aspland arrived and a small hospital was built.

Two dispensaries were opened by the *German* military doctors. Of one, little is known but the other which was established in the East city in January 1901, not only took care of male and female out-patients but also had a ward for male in-patients. Though superintended by Dr. Perthes of the German Field Force, it was from the first under the control of the London Mission. Dr. Perthes was succeeded in July by Dr. Wordsworth Poole, C.M.G., and after the latter's death Dr. Cochrane took charge in November, 1901.

A *German Military Hospital* was permanently instituted at Peking in 1903. Though some aid was given to the Chinese this branch of the work became prominent only after the outbreak of the Great War (893).

We shall now deal with the great progress made in *medical education*. Its problems were more than ever in the limelight of general attention as proved by numerous contributions to the 1901 volume of the *China Medical Missionary Journal* (894). A much discussed question was that of a Central Medical School. However, the moment was not considered propitious for such a vast undertaking (895), and the peculiar difficulties besetting this problem continued to exist. While Shanghai was in many respects the most suitable place for a central school, its manifold advantages were counterbalanced by the fact that a local and not the *mandarin* dialect was spoken there. Taking account of this circumstance Dr. Neal, for instance (896), mentioned the possibility of teaching in English but at the same time suggested Nanking (where teaching in *mandarin* was feasible) as a second choice. In fact the general consensus of opinions was in favour of teaching in Chinese, Nanking and Hankow being considered the places most favourable for the proposed Central Medical School. As we shall see it was not possible to realise these plans nor even to create a central ex-

(893) Saville, *China Med. Miss. Jl.*, 1902, p. 213; Cormack, *China Med. Jl.*, 1926, p. 525; 1930 Directory, Peiping, p. 45.—From Dr. Saville's letter it can be gathered that she opened a dispensary in the West City and also gave up a part of her own courtyard for the accommodation of female in-patients. The American Presbyterians and the Methodist Mission also resumed their dispensary work and paid a considerable number of visits to patients in their own homes.

(894) Besides the articles mentioned in the text, deserve notice: Boone, p. 173; Whitney, p. 195, Cousland, p. 199; Editorial, p. 216; Beebe, p. 268. See also correspondence on p. 304.

(895) This was specially emphasised in the presidential address by S. R. Hodge, who recommended *pro tempore* a Central Examination Board (*ibidem*, p. 149).

(896) *Ibidem*, p. 180.

amination board. Nevertheless, substantial progress was made in the creation of *Union Medical Schools*(897).

Canton. To proceed with a discussion of educational endeavours in chronological order, mention must first be made of the provision for female students at *Canton*: In 1901, just after the Chinese New Year, Dr. Mary Fulton opened the *Kwang Tung Medical School for Women*(898). The original staff in addition to Dr. Fulton, consisted of Drs. Kerr, Boggs, Selden, Niles, So To-meng, Ho Tsz-hing, U Mi-tak and Shi Mui-hing. The students (two of the eleven originally admitted soon gave up) were instructed in the Cantonese language.

The provisional accommodation in the First Presbyterian Church building proving inadequate, endeavours were made to provide a special hospital for women and children in connection with the school and subscriptions amounting to \$3,000 were soon raised from Chinese donors. Such an establishment, called the David Gregg Hospital, was actually opened in 1902 and the young students were temporarily removed to the third floor of this building. Towards the end of the same year, a special building for college use became available through the generosity of Mr. E. A. Hackett of Indiana, U.S.A., the school assuming in his honour the name of the *Hackett Medical College for Women*.

Diplomas bearing the college seal were given to two students in 1903. Four more graduated in 1904, three in 1905 and three in 1906. About the same time, through a timely second gift from Mr. Hackett, a second college building to house lecture and laboratory rooms was opened, the first serving from then onwards as a dormitory only.

In 1906 or 1907 the curriculum was extended to four years. Seven students received diplomas in the latter year to which, in addition to the stamp of the U.S. Consulate, the seal of the Viceroy was affixed. As a further sign of his appreciation the Viceroy presented three gold watches as prizes for the best students, while Wu Ting-fang, Ex-Minister to the United States, gave an address. Viceroy Cheung Yan-tsun personally attended the commencement exercises of 1908, Sir Leung Shing (also formerly Chinese Minister at Washington) addressing the meeting.

Dr. Fulton summarised in her historical sketch(898) that up to 1909 over thirty students had graduated, some of whom had

(897) Central medical schools were again recommended in Dr. Christie's presidential address (*China Med. Miss. Jl.*, 1906, p. 48).

(898) It is often stated that this school was started in 1899. Our date is that given by Dr. Fulton herself (*China Med. Jl.*, 1909, p. 324; see also *China Med. Miss. Jl.*, 1901, p. 244).

gained enviable reputations in Canton and elsewhere as physicians as well as surgeons. The staff then comprised:

Drs. Mary H. Fulton, Dean,	Clinical Surgery;
Harry W. Boyd,	Ophthalmology and Bacteriology;
Edward Machle	Therapeutics and Pharmacology;
Charles Selden,	Neuropathology;
Mary W. Niles	Emeritus Professor of Obstetrics;
Lo Shau Wan,	Obstetrics and Diseases of Women and Children;
Lam	Anatomy;
So To-meng, .	Surgery;
Leung Kin Cho,	Practice;
Wong Sin Shang,	Chemistry;
H. A. Cheng,	Physiology;
Chan Sui Wa	Dermatology and Physical Diagnosis;
Mo,	Bandaging;
Low,	Associate in Pharmacy;
Lau Tsz Wai,	Dentistry.

Dr. Fulton continued as Dean of the school for 16 years. In 1915, at the request of the China Medical Missionary Association, she commenced with the translation of medical books in Shanghai but was soon compelled to return to America on account of ill-health. She died in 1929. Dr. Niles was connected with the school until 1923 when she devoted herself entirely to the Ming Sam School for the Blind founded by her in Canton in 1891. She retired in 1928 and died in 1933.

A new historical sketch of the Hackett Medical College, written by Dr. J. Allen Hofmann, appeared in 1926, when the China Medical Journal again issued an Educational Number(899). From there it can be gathered that 155 students had graduated, about 60% of whom settled in private practice while 20% were in the employ of Missions. The curriculum had gradually become lengthened to six years, a pre-medical course as well as a year of internship in an approved hospital being added.

Hankow. The beginnings of regular medical instruction at *Hankow* go back to the year 1902. As Dr. Gillison summarised in 1909 (900), about ten hospitals had been gradually installed in the three neighbouring cities of *Hankow*, *Hanyang* and *Wuchang*, in most of which the assistants had been trained "in a partial and sporadic manner." Attempts made to create a Union school were unsuccessful, so the London Missionary Society commenced alone in March, 1902, with two doctors on the teaching staff, occasionally assisted by visiting lecturers from other centres (e.g. Drs. Logan, Hume, Cormack). Teaching was in Chinese (Mandarin), the original curriculum six years, four of which had to be spent at the

(899) P. 776; see also China Med. Miss. Jl., 1906, p. 271; Report of the Rockefeller Comm., p. 36; China Med. Jl., 1918, p. 479, 1926, p. 793.
(900) China Med. Jl., 1909, p. 333.

school and two in hospital. The first class of four students graduated in 1908(901).

In the same year, a union was formed between the London Missionary Society, the Wesleyan Methodists and the American Baptists, the result of which was the foundation of the *Hankow Union Medical College*. In 1909 its teaching staff consisted of Drs. Booth (Wesleyan), Huntley (Baptist), Gillison and Mc All (L.M.S.). The first season commenced in February, 1909, 14 students from the original school and 13 freshmen attending. A course of five years was arranged for and an annual fee of \$85 (covering all expenses including board, etc.) was charged.

The school was closed in 1918, the pupils then in training being transferred to Tsinanfu under their teachers T. Gillison and P. L. McAll, and continuing their studies at the Shantung School of Medicine(902).

Tientsin. An *Army Medical College* was established at *Tientsin* in 1902 by Viceroy Yuan Shi-k'ai to train medical officers for the reorganised forces. Its first director was Dr. Hsu Hua-ching, one of the first graduates of the Peiyang Medical College. The staff was then mainly made up of Japanese professors but after the Revolution, these were replaced by Chinese teachers. The College was taken over by the Medical Department of the War Ministry in 1906 and a School of Pharmacy was attached to it at the same time.

As can be gathered from the report of the Rockefeller Commission(903), the school had the admission requirements, the four-year course and the standard of instruction of the Peking Medical Special College. By 1914, 23 professors were employed, of whom fourteen gave instruction in strictly medical subjects; six were in the department of pharmacy and three taught Japanese (one year), German (three years) and physics respectively. The school had no hospital of its own, the students attending clinics at the Tientsin hospital, a small government institution nearby. Up to 1914 over 400 students had graduated.

In 1918 the College was transferred to *Peking* and placed under the management of Surgeon-General Chuan Shao-ching (S. H. Chuan). It occupied an enormous area in the East city between Fifth and Tenth Streets, the ground comprising nearly forty acres. The institution, from which up to 1930 had graduated over a thousand students, was removed in 1933 to *Nanking*. A four and a

(901) *China Med. Miss. Jl.*, 1904, p. 156, 1905, p. 163; *China Med. Jl.*, 1909, p. 318.

(902) *Ibidem*, 1918, p. 205, 1926, p. 759.

(903) P. 13; also 1930 Directory of the Nat. Med. Assoc., Peiping, p. 15; *Pi, Nat. Med. Jl.*, 1931, p. 120; *Chin. Med. Jl.*, 1935, p. 998.

half year course (including three months of military training) is now being offered, followed by three months internship in a military hospital.

Soochow. The educational work of the Methodist Episcopal Church South at *Soochow* underwent a change when, early in the decade now under discussion, the school for men under Dr. Park was chartered under the laws of Tennessee and became the Medical Department of Soochow University. The department for women, at first under Dr. Anne Walter-Fearn and then Margaret H. Polk, received a charter of its own (904). Theoretical lessons and recitations remained in common, however, while practical instruction was given in the respective hospitals.

Graduations took place in 1900 (7 candidates, among them Lee Foh-sun—李福生—afterwards Professor at the Imperial Medical College, Peking); in 1902 (3 candidates, two of them women) and 1904 (7 men, among them Tsang Pao-gie—張葆琪—, later Manager of the Army Hospital in Kiangpu, and two women).

About the year 1907 a *School of Pharmacy* was organised in connection with the two hospitals by the Rev. B. D. Lucas, Ph. G., who had joined the hospital as electro-therapeutist in 1903. Among the teachers there were besides the Rev. and Mrs. Lucas, Drs. Polk, Yandell (Yang Vee Yuer—楊維翰—, the only surviving member of the class of 1888 who had been in private practice at Wusih for twenty years), Y. W. Lee and Z. V. Zung. The course extended over two years, the first graduation being held in 1909.

The interest of an endowment of G\$5,000, given by Mrs. W. W. Carre in honour of her father, Dr. Beach of New Orleans, was used to support a chair of bacteriology and microscopy which was entrusted to Dr. Yandell, now house-physician and superintendent of the Soochow hospital.

Dr. Park went on leave in 1909, when the school for men was temporarily closed. Hopes were entertained that he would be able to raise funds for a real medical college to be reopened in February, 1911. Unfortunately this plan could not be realised. The school for women was continued by Dr. Polk who was gradually joined by other instructors. The teaching, formerly given in Chinese and English, was now entirely in the latter language and a course of five years was offered. The school continued to exist until it was

(904) It could not be exactly established when this change took place. A statement in the *China Med. Jl.*, 1926, p. 936, claimed that the Medical Department of the University was formed in 1900 while the school for girls became in 1902 "the first chartered Medical School of China for Women." But according to an item published in the *China Med. Miss.* incorporated not before 1902 or even 1903.

transferred in 1921 to Shanghai to be united with an educational undertaking of the Margaret Williamson Hospital(905).

Shanghai. In March 1903, a Roman Catholic institution of university grade was inaugurated at *Shanghai* by the Jesuits under the name of *Aurora University*. The establishment was first located at Zikawei but was transferred in 1908 to Lokawei in the French Settlement Extension. The teaching was mainly in French, but some English was taught as well(906). Besides Faculties of arts, law, science and civil engineering, one of medicine was established in 1909 with a premedical course. Medical courses were commenced in 1912, Drs. Ricou and Pellet being the first teachers.

The curriculum of the school, which continues to exist, is modelled according to the French system with a pre-medical course of two years (with teaching in osteology during during the 4th term) and a medical one of four. The two hospitals used in 1935 for clinical instruction are St. Anthony's Hospital with 100 beds and St. Mary's Hospital with 445 beds available for teaching. A School of Dentistry is attached with a curriculum of four years.

The number of graduates from 1917-1929 was 45; by 1935 it had risen to 15—20 per year. The Faculty now comprises 23 teachers as against 10 in 1929-30(907).

Canton. The educational work conducted for many years at *Canton*, first in the Missionary Hospital and later in the hospital for insane, suffered a severe loss when on August 10, 1901, the great pioneer Kerr succumbed to dysentery. In the same way, however, as Kerr had been able worthily to continue the activities of his predecessor Parker, now his assistants managed to carry on.

The Medical Missionary Society on the initiative of Dr. Swan resolved at its 1902 meeting to consider the foundation of a *South China Medical College* and appointed a special committee under U.S. Consul McWade to carry out this plan. In 1903 a commodious college building was erected on a site donated by the Viceroy, the bulk of the cost (over \$16,000) being provided by special subscriptions, mostly from the Chinese. The school was actually opened in November, 1904. As during Dr. Kerr's time, the teaching was in Cantonese, a curriculum of four years being adopted.

Dr. Anton Andersson was for some time in charge of the work to which he devoted his entire time. Unfortunately, serious impair-

(905) *China Med. Miss. Jl.*, 1904, p. 56, 1905, p. 159; *A Century of Prot. Miss.*, pp. 418-420; *China Med. Jl.*, 1909, p. 300 (Park); *Report of the Rockefeller Comm.*, p. 36; *China Med. Jl.* 1928, p. 65 (Park's Obituary).

(906) *Customs Decennial Report*, 3rd Issue, Vol. II, p. 22; *Encyclop. Sinica*, p. 584; *Latourette, l.c.*, p. 559.

(907) 1930 *Directory of the Nat. Med. Assoc.*, Shanghai, p. 34, *Med. Instit.*, p. 14; *China Med. Jl.*, 1935, p. 999.

ment of health obliged him to retire in 1907 and—owing to the lack of a suitable teaching staff, the college work was largely discontinued during 1908. In February, 1909, a new four-story dormitory was completed and the work resumed. As can be seen from an article published by Dr. Swan in that year the staff of the College was as follows:—

Dr. Swan,	Surgery, Medical and Surgical Clinics;
Dr. J. Webb Anderson,	Gynecology;
Dr. Selden,	Nervous Diseases;
Dr. Oldt,	Materia Medica, Hygiene and Sanitation;
Dr. Ip Sheng-teng,	Physiology, Obstetrics;
Dr. Nye Sik-pang,	Theory and Practice, Med. and Surgical Clinics;
Dr. Chi Tu-teng,	Materia Medica and Therapeutics;
Dr. So To-meng,	Eye Diseases;
Dr. Hung,	Anatomy;
Dr. Lau Tak-ip,	Chemistry.

Again, the staff soon became depleted and the school work ended in 1912. Dr. Swan retired two years later (1914) from the service of the Medical Missionary Society to engage in private practice and conduct a hospital at Tung Shan, Canton. He died in 1919(908).

In 1904 the Christian Association of the Pennsylvania University undertook to carry on a medical department in connection with the Canton Christian College. Four medical men, among them Dr. J. C. McCracken, and a nurse were sent out who taught one medical class (as well as an excellent body of nurses) mainly using the *English* language. The labours of the Pennsylvania Association were then transferred to Shanghai.

The property of the *University Medical School* at Canton, consisting of upwards of eight acres of land and a small hospital with dispensary, was left for the use of the Christian College for a period of three years with an option of buying it afterwards. Drs. McCracken and William W. Cadbury remained and together with Dr. Tsing Men Li began in September, 1909, a preparatory medical course to be followed in 1911 by the first class of the Medical School. Teaching continued to be in English(909).

Peking. The history of the *Union Medical College* at Peking goes back to the years 1903-04 when the North-China Educational Union was formed by the London Missionary Society, the American Presbyterian Mission and the American Board Mission. Gradually other missionary bodies, including the Board of Foreign Missions of

(908) China Med. Miss. Jl., 1901, p. 292; Swan, *ibidem*, 1902, p. 96; 1905, p. 34; Swan, China Med. Jl., 1909, p. 303; *ibidem*, 1920, p. 106; Canton Hospital Report for 1916, p. 73.

(909) A Century of Prot. Miss., p. 546; China Med. Jl., 1909, p. 406; Rep. of the Rockefeller Comm., p. 26.

the Methodist Episcopal Church, the Society for the Propagation of the Gospel and the Medical Missionary Association of London, joined the union.

The Methodists, when becoming members of the union, gave up their medical classes which had been conducted in connection with the Peking University. However, in 1903 a few Chinese professors of the University made a modest beginning in a small leased house, located in Tai Ping Street in the North City, where a few scores of students were taught the elements of western medicine. In the following year, this "Peking Medical College" was removed to its present site, situated between Pa Chiao Liu Li Chang and Ho Sun Kung Yuan, but it only obtained official status after foundation of the Republic(910).

Reverting to the Union Medical College, the regulations of the Educational Union provided that the society with which an institution was 'located' must furnish the plant. Consequently the task of creating the medical college evolved upon the London Missionary Society. This was most fortunate because the society possessed in Dr. Thomas Cochrane a representative whose great administrative abilities as well as acquaintance with the Chinese officials made it possible to start the work on a much larger scale than would otherwise have been feasible. Dr. Cochrane's patient, the head-eunuch Li Lien-ying, interested the Empress-Dowager in the scheme, who contributed Tls. 10,000 (£ 1,400). Chinese officials and gentry added £ 1,600 and the foreign residents £ 280(911).

According to Dr. Charles W. Young (placed in 1904 at Peking by the American Board specially for medical union work) the original buildings which cost Tls. 62,660,

consist of two blocks. The main building, fronting on the Ha Ta Men Street, contains lecture rooms, laboratories, and operating rooms, as well as rooms at present used as hospital wards.

Behind the main building and at right angles to it, are the students' quarters, which have accommodations for part of the foreign staff and about one hundred students (912).

The College was solemnly opened on February 12, 1906, two princes of the Imperial house, high Chinese dignitaries, Sir Ernst Satow (H.B.M. Minister), Mr. W. W. Rockhill (U.S. Envoy) and Sir Robert Hart being present. H. E. Na T'ung presided and read an address of congratulation from the Empress-Dowager. A most

(910) 1930 Directory of the Nat. Med. Assoc., Peiping, p. 12.

(911) Dr. C. W. Young stated (China Med. J., 1909, p. 312) that in 1908 the Imperial Customs and Waiwupu promised an annual grant of Tls. 10,000 toward the running expenses of the Medical College and London Mission Hospital.

(912) This dormitory section was opened in 1908 while the main building was ready in 1906.

remarkable speech was made by Customs Inspector-General Hart who, referring to Dr. Lockhart, said:—

Just as this pioneer man has been followed by a succession of devoted descendants, so too will not fail this pioneer College, to be productive. If it does not itself develop into the Imperial College of Surgeons of China, it will prepare the way and produce such a College, and will yet see other offspring, other medical schools and colleges, seats of the truest learning, and the broadest culture in every quarter of this deathless empire.

In the summer of 1906 the College was recognised by the Chinese Government, the following dispatch being received from the Board of Education:—

Whereas a communication has been received, together with rules and regulations and a list of names, from Dr. Cochrane, requesting the formal recognition of the Union Medical College, and

Whereas the benevolent object of the said Dr. Cochrane in inaugurating a medical college for the training of students is conceived in the interests of the welfare of mankind, and

Whereas Her Majesty the Empress-Dowager of China has contributed a sum of money towards and granted the Imperial sanction to the establishment of such a college with special privileges,

Now therefore sanction is hereby given for the dispatch of officials by this Board to hold examinations at the conclusion of each course in the said college and for the issue of diplomas to such candidates as attain the prescribed standard, certifying that they are entitled to practise medicine.

The above notification is issued by this Board in furtherance of the desire of the Empress-Dowager of China for the advancement of the study of medicine and the encouragement of benevolent undertakings.

Thus the Union Medical College was the only institution in China that obtained such recognition until a similar privilege was granted to the German Medical School at Tsingtao.

The first class consisted of over thirty men, some students who had previously attended the medical classes of the London Mission and of the Medical Department of the Peking University, being included. Training was in *Mandarin* but the students were also required to learn English. The course covered five years of nine months each and was arranged so as to teach the fundamental branches in the first two years by lectures and laboratory work, and to give training in medicine, surgery and the specialities during the last three years.

An International Examining Board was established, composed of the physicians of the British, American, German, Italian and Japanese legations. It reported in January, 1909, in the following terms:

The examiners of the International Examining Board have been very well satisfied with the state of preparation shown by the students at the recent examinations. The third year students who have passed in anatomy and physiology can be looked upon as having laid a sound foundation as far as these subjects are concerned, for their future studies.

According to the prospectus of the College published in 1906 the Faculty comprised:—

Thomas Cochran, M.B., C.M., Dean; Nehemiah S. Hopkins, M.D., O. et A. Chir.; James H. Ingram, M.D.; George D. Lowry, M.A., M.D.; Charles Lewis, M.A., M.D.; Joseph F. Griggs, M.A., M.D.; Ernest J. Peill, M.B., Ch. B., F.R.C.S. (Edin.); Charles W. Young B.S., M.D.; W.H. Graham Aspland, M.D., C.M., F.R.C.S. (Edin.) and thirteen other gentlemen as lecturers. Chinese tutors were also included in the teaching staff.

Dr. Young, in an article published in 1909 in the Educational number of the China Medical Journal enumerated as teachers besides Drs. Cochran, Hopkins, Ingram, Lowry, Peill, Aspland and himself, the following:—

Francis J. Hall, B.A., M.D.	J. M. Stenhouse, B.A., M.B., B.C.
Herbert V. Wenham, M.B., B.S.	F. E. Dilley, M.D.
E. R. Wheeler, M.B., B.S.	J. G. Gibb, M.D., M.S.
John J. Mullowney, M.D. (913).	

Shanghai. The St. John's University School of Medicine at *Shanghai* continued to work during the first half of this decade in the manner outlined in the preceding chapter. Its staff was increased in 1901 by the arrival of Dr. W. H. Jefferys to join St. Luke's, and Dr. Juliet N. Stevens, who succeeded Dr. Gates in charge of the women's hospital, later called St. Elizabeth (914). Both immediately took part in the teaching of the second medical class which had started in 1899 and graduated in 1903. The candidates were Messrs, E. S. Tyau (Tyau-sing-teh, now with St. Luke's Hospital), E-li Day, F. C. Yen (with whose further career we will deal) and Z. L. Yang.

In 1905 Dr. Angie M. Myers joined the mission, Dr. Stevens having resigned. She taught pathology to the class begun in 1903. From a report published by Dr. Boone in 1905 it can be gathered that a few of his students, after having been examined by a board of medical men at Tientsin, went to South Africa to take care of the Chinese labourers sent to that country for work in the mines.

An important change took place in 1906 when the college was *incorporated* under American law thus obtaining the right to confer the *M.D. degree*. The course was lengthened to five years (915) and the students were strongly advised to take at least one year of

- (913) China Med. Miss. Jl., 1902, p. 132; Peill, *ibidem*, 1906, p. 122; *ibidem*, p. 229; A Century of Prot. Miss., pp. 10, 275; Young China Medical Jl., 1909, p. 312; Cormack, *ibidem*, 1926, p. 529 and foll.
- (914) Dr. Gates' place was temporarily taken by Dr. Glenton who taught diseases of children and skin diseases (China Med. Miss. Jl., 1901, p. 24).
- (915) At first a curriculum of five years was obligatory only for those students who wanted to become M.D., while those choosing to study four years, were, as heretofore, granted certificates. The fifth year was originally spent as interne in the hospital (Editorial, China Med. Miss. Jl., 1906, p. 180).

interne work before beginning the practice of medicine. At the same time, the pre-medical requirements were raised, so that no matriculant would be accepted until he could present certificates from a recognised college or scientific school showing the completion of at least two years' work of college grade, or prove that he had passed equivalent examinations.

The first to avail themselves of these new opportunities were Messrs. Day and Tyau of the class of 1903 and Voonping Yui (graduated in 1907) who after having taken an additional year of study and having passed a special examination, received the M.D. degree in 1908. Five students received the same honour at the graduation exercises in July, 1909. The staff of the school was at that time made up of:—

H. W. Boone, Dean	Professor of Practice of Medicine and Lecturer on Hygiene and Legal Medicine.	Left China on sick leave in June, 1910, never to return. Died 86 years old in 1925.
F. C. Cooper, M.Sc.	Professor of Chemistry and Materia Medica.	
C. S. F. Lincoln	Professor of Anatomy, Physiology and Histology.	
W. H. Jefferys	Professor of Surgery, Tropical Med. and Diseases of the Eye.	
Angie M. Myers	Professor of Dis. of Children.	
A. W. Tucker	Professor of Obstetrics, Gynecology, Lecturer on Genito-urinary Diseases & Applied Anatomy.	Arrived 1906.
Ellen M. Fullerton	Professor of Pathology.	Arrived 1908.
E-li Day	Instructor in Minor Surgery and Bandaging.	
E. S. Tyau	Instructor in Diseases of the Skin.	
Waung Koh-toong	Instructor in Pharmacy (916).	

Wuchang. Though a medical school had been formed in 1902 by the London Missionary Society at Hankow, the earlier idea to create a union undertaking in the district was not given up. In pursuance of this scheme the *Boone Medical School* was opened at *Wuchang* in March, 1907. On its Faculty were representatives of most local missions and, in addition, the voluntary services of two private practitioners were assured. It was resolved to instruct in *English* for a period of six years, three of which were to be spent at the School, three in the affiliated hospitals.

(916) Boone, *China Med. Miss. Jl.*, 1905, p. 39; Lincoln, *China Med. Jl.*, 1909, p. 308; *ibidem*, 1911, p. 120, 1925, p. 971, McCracken, 1926, p. 753. As Miss Anne Lamberton kindly informed us, there graduated in 1907 besides Dr. Voonping Yui, T. M. Li, W. S. New and S. Y. Dzau, in 1909 U.K. Koo, H. C. Chen, S. Z. Hyui, K. T. Wong, T. H. Woo.

The School did not prosper long, because one member of the Faculty died, another fell ill, while others objected to the loss of time and inconvenience in crossing the river to deliver lectures. Thus the work practically came to a standstill until the summer of 1908 when the majority agreed to concentrate their efforts on the undertaking of the London Missionary Society at Hankow (see above). The American Episcopalians, however, did not join this new union but decided to keep the English-teaching school at Wuchang open. A new class of eleven students (several of them from Honolulu) was started in 1909, the pupils pledging themselves to finish a course of five years with one more for post-graduate instruction. The teaching staff consisted of (a) three foreign physicians (b) two Chinese ones, (c) lay teachers in chemistry, physics and biology (d) and two foreign nurses.

The establishment existed for two and a half years only when it was decided to send the students to the Harvard Medical School in Shanghai(917).

Shanghai. The *German Medical School* at Shanghai was the natural outgrowth of a charitable hospital, called the *Tungchi* (同濟) which was founded in 1900 by Drs. E. H. Paulun and von Schab. In 1901 a proper building was secured.

The school connected with this establishment was commenced in October, 1907, with Professors Du Bois-Reymond, Ammann and Schlingler on the staff. Among the students were a number of young men sent by Viceroy Tuan Fang, who were to enter the army after graduation.

The further history of the School will be told in due course. Here it is necessary to record the generally deplored death of Dr. Paulun in 1909, the hospital hereafter being named in his honor(918).

Peking. Once more we must turn our attention to *Peking* to see in what way provision was made for the medical education of *women*. Training for nurses had already been started in the capital, these endeavours being put on a solid foundation in 1905. Soon the question of giving higher training to female students came up (1906) but definite action was only taken two years later (1908) when the *Peking Union Medical College for Women* opened with a class of two girls. The College was backed by three American Missions (Methodist, Presbyterian and Board of Comm. f. Foreign Missions), the London Missionary Society, after some deliberation, having found it impossible to participate. Dr. Gloss of the Methodist Episcopal Church having taken the lead in maturing the scheme, the College was located in

(917) *China Med. Miss. Jl.*, 1906, p. 190, 1907, p. 41; *China Med. Jl.*, 1909, p. 318; *Encyclop. Sinica*, p. 54.

(918) *China Med. Jl.*, 1908, p. 125, 1909, p. 218.

the hospital recently opened in their compound near Hatamen, while part of the teaching was given in the laboratory of the general college for women.

The course was originally one of six, then of five years, the teaching in *mandarin*. Instruction in the English language was, however, given in order to enable the students to read medical publications in that language.

The Faculty consisted in 1909 of:

Drs. Eliza Leonard (Presbyt. M., Dean).	Drs. Maud A. Mackey;
Anna D. Gloss;	Melissa Manderson;
N. S. Hopkins;	Charles W. Young;
George D. Lowry;	Miss Jessie E. Payne, B.S.

It will be noted that some of the instructors of the Union Medical College for men participated in teaching at the school for women—this policy being the natural outcome of the fact that, in part, the same missions were interested in both institutions.

A second larger class was admitted in 1910 while the first two students graduated in 1914. The school continued to exist at Peking until 1923, when it was transferred to, and united with, the medical department of the Shantung Christian University. Dr. Gloss had retired in the meanwhile (about 1915) but Dr. Leonard and four other teachers went with their students to Tsinanfu(919).

Soochow. In the foregoing chapter we have described the opening of a medical class in connection with the Elizabeth Blake Hospital at *Soochow* under Dr. Wilkinson. Besides this pupils were trained by Southern Presbyterian medical missionaries at Kashing (Dr. Venable), Kiangyin (江陰—Dr. Worth) and Tunghsiang (Shields).

In 1908 when Dr. Wilkinson went on furlough, the mission transferred Dr. Shields to *Soochow* in order to teach the medical students from all four above-mentioned stations. This was intended to be the first step towards the establishment of a medical school "looking towards union or co-operation with other missions, either in *Soochow* or elsewhere."

Nanking. In 1909, at the call of Dr. Cousland, a meeting was held in Shanghai to discuss these plans and it was decided to attempt the foundation of an *East China Union Medical College* at *Nanking*. This plan was realised in 1910 and in 1913, the College became a department of Nanking University. Its course was one of five years with a preparatory year; instruction was in *mandarin*, but certain technical terms were taught in English.

(919) *China Med. Jl.*, 1909, p. 334; Gloss, *ibidem*, 1910, p. 423; Report of the Rockefeller Comm., p. 36; *China Med. Jl.*, 1924, p. 841, 1926, p. 760, 1928, p. 334 (Obituary for Dr. Gloss).

The Nanking College closed its doors in 1917 when Drs. R. T. Shields and P. S. Evans Jr. with their pupils joined the Shantung Christian University School of Medicine(920).

Canton. A significant undertaking based upon hearty co-operation between Chinese and foreigners began to function in 1909 at *Canton*, under the name of *Kung Yee* (i.e. Public Healing) Medical College. In order to probe the motives for its foundation, we must remember that the medical school connected with the Canton Missionary Hospital was closed in 1908. An effort was made by members of the Presbyterian Mission to start a new school for men but was vetoed by the Home Board. It was in order to provide for the forty odd students thus bereft of the means of continuing their studies that an attempt was made to begin with a new educational undertaking supported entirely by the Chinese but run with the aid of foreign experts, especially Dr. Paul J. Todd who—formerly connected with the Presbyterian Mission—was then in charge of an eighteen-bed private hospital in a rented building in Yan Tsai Street. His efforts to purchase property to build a hospital of his own were unsuccessful but he found ready response when appealing to Chinese friends like Mr. (afterwards Dr.) Wong Tai-kong, Leung Lok-shan and Chung-Tsoi-chuen for help. A meeting was held in winter, 1908, when it was resolved to find fifty men each willing to subscribe \$100 towards the foundation of a school and who would act as a committee. This plan was realised within a few days and the Kung Yee Society began to function with Mr. Poon Pui-yue as President.

Dr. Todd was appointed Dean of the new school and Dr. So To-meng, Proctor. A residential house was rented in Sap Sam Poo Street (Canton West) and here teaching was commenced early in the year 1909 with forty-two students and thirteen instructors. At the same time it became possible to secure a desirable site fronting the Bund at a cost of \$21,000 raised by subscriptions. In the next year (1910) a building next the hospital site was rented for class rooms, etc., and the College temporarily moved to it(921).

We will continue with the history of this great institution in the following chapter.

Tsinanfu. The aspiration of Dr. Neal at *Tsinanfu* to replace the attempts to train apprentices rather than students in different stations in Shantung by a proper school assumed more definite shape in 1902 when it was proposed to establish an educational union between the English Baptist and American Presbyterian Missions. A proposal

(920) Shields, *China Med. Jl.*, 1909, p. 321; *Rep. of the Rockefeller Comm.*, p. 24; Shields, *China Med. Jl.*, 1926, p. 759.

(921) Todd, *China Med. Jl.*, 1913, p. 143; *A Brief Sketch of the History of Kung Yee*, 1925, pp. 11-12.

that this scheme should include a Union *Medical College* found ready agreement. However, no proper premises were immediately available nor could a sufficient number of teachers be concentrated at the seat of the proposed college.

In order not to lose time it was arranged to work together in carrying on 'peripatetic' classes. Accordingly, since 1904, (when the union of the two missions came into effect) union medical classes were conducted partly at Tsinanfu under Dr. Neal, partly at Tsingchowfu under Drs. Paterson and Watson of the English Baptist Mission; other doctors like Johnson at Ichowfu also took part in this work.

In 1908 a suitable site was finally secured in the southern suburb of Tsinanfu and in the next year a *Union Medical College* was founded by the two missions to be the medical department of Shantung Christian University. The first regular class was admitted in 1910 when a building, erected by the English Baptist Missionary Society with the aid of grants made by the trustees of the Arthington Fund, became available.

Besides Dr. James Boyd Neal, the original teachers were: Drs. E. Freiherr von Werthern, James Russell Watson, Thomas C. Paterson and Charles F. Johnson. Teaching was in Chinese and extended over six years (one preparatory) (922).

Taichowfu. In 1909 a China Inland Mission Medical School was founded at *Taichowfu* (Chekiang) under the Rev. John Arthur Anderson, M.D. Little is known about this enterprise or the educational work of Dr. Machle at Lienchow who in 1906 had small medical and dental classes (923).

It is evident that the splendid advances made in the field of education must have presupposed progress in the domain of *medical nomenclature* and *Chinese text-books* and at the same time served as a stimulus to further endeavours in this direction. In fact, we find that the Nomenclature Committee of the China Medical Missionary Association was in session early in 1901 for six weeks at Shanghai. As a result of these labours, a pamphlet was published in 1901 which contained lists of terms in Anatomy, Histology, Physiology, Pharmacology and Pharmacy. A second edition of the anatomical terms together with those in *Materia Medica*, Pharmacology, Pharmacy and Bacteriology was published in 1905 and the Conference of the Association meeting in the same year was presented with a compilation of terms covering all subjects of the curriculum. The work of the Committee was again discussed and ratified at the Conference held in April, 1907,

(922) Neal, *China Med. Jl.*, 1909, p. 316; Shields, *ibidem*, 1926, p. 759

(923) *Educational Directory and Yearbook of China*, 1920, Part III, p. 10; *China Med. Miss. Jl.*, 1906, p. 50.

at Shanghai, when the services of Dr. Cousland as *Chinese Editorial Secretary* were secured. He published in June, 1908, the Terminology Committee's Medical Lexicon which was laid before the Board of Education in Peking with the hope that it might in due course receive official recognition(924).

Besides some *medical books* published early in the decade now under discussion (e.g. a work on Obstetrics by Dr. D. Main-925), a series of translations made with the aid of the *uniform nomenclature* as prepared by the China Medical Missionary Society committees deserves special mention. The first of these was Cousland's rendition of Halliburton's Physiology (sold out so soon that in 1907 a second edition became necessary and a third in 1910) followed by a Chemistry (Gillison) and a new translation of Gray's Anatomy by Whitney in 1905(926).

Further additions to medical literature in Chinese were:—

Luff's Chemistry, translated by Dr. George A. Stuart (927), Duhring's Skin Diseases by Dr. Neal, Evans' and Ashton's Obstetrics by Dr. Mary Niles, Archinard's Bacteriology by Dr. Venable, Penrose's Gynecology by Dr. Marry Fulton, Hare's Therapeutics by Dr. Ingram, Kerr's Practice of Medicine revised by Dr. Mary Niles, and a Military Hygiene translated by two Chinese graduates of Nanking University (928).

From 1904 onwards, the Customs Medical Reports, in size as well as in the value of their contents, did not come up to the standard of earlier issues. This was made good, however, by progress in other *medical periodicals*. As already alluded to, the China Medical Missionary Journal came out in 1905 in bi-monthly issues (as resolved at the Conference of that year) while beginning with No. 3 (May) of 1907 it appeared under the name of the *China Medical Journal* (929). In the year 1904, a prize was offered for the best article written by a Chinese graduate(930). Among early papers published in the journal by Chinese doctors at that time, one by E. S. Tyau on the phrases used by patients in Shanghai, Notes on Cases by V. H. Yang (Yandell) then at Wusih, T. K. M. Siao's on the Advantage of Using English in Teaching Medicine to Chinese Students, and Ida Kahn's (Chinkiang) on Self-Supporting Medical Missionary Work(931), deserve mention.

(924) China Med. Miss. Jl., 1901, p. 151; Cousland, *ibidem*, 1905, p. 53; China Med. Jl., 1907, p. 136, 1910, p. 153.

(925) China Med. Miss. Jl., 1902, p. 38.—In 1900 a number of Japanese medical books had been translated into Chinese by Ting Fu-pao (丁福保)

(926) China Med. Miss. Jl., 1906, p. 79; A Century of Prot. Miss., p. 266. As reported at the 1910 Conference a new abridged translation of this was in preparation.

(927) China Med. Miss. Jl., 1906, p. 79.

(928) China Med. Jl., 1907, pp. 147, 280, 1910, p. 151.

(929) China Med. Miss. Jl., 1906, p. 39, 1907, p. 136.

(930) *Ibidem*, 1904, p. 34. We have no record if and to whom this was awarded.

(931) *Ibidem*, pp. 22, 57, 1905, pp. 105, 233.

In 1906 a *medical journal in Chinese*, called the *Sai Yi Chi San Po* was started by Dr. J. E. Kuehne, Tungkun, with the aid of Cheung Kan-kwong. Intended to keep former pupils (932) informed of medical progress it does not seem to have lasted long. The same fate befell the following monthlies started soon afterwards by Chinese doctors:—

Name editor:	Name journal:	Date 1st publication, etc.:
S. Y. Liang 梁愷如	醫學衛生報 Medical & Hygiene JI.	1908;
T. U. Wong 汪惕予	醫學世界 Medical World	From 1908 onwards altogether 30 numbers published;
Kwong Kwa Medical Association	光華醫事衛生雜誌 Kwong Kwa Medic. & Hygien, JI.	From 1910 onwards altogether 10 numbers published;
Medical & Pharmaceutical Association	醫學藥報 Medical & Pharmaceutical Journal	1910.

Two journals, which began in 1910 and still continue to exist are (a) Chinese-Western Medicine (中西醫報), later on called Teh-kwa Medical Journal and edited by Dr. Ting Fu-pao (丁福保); (b) Chino-German Medical Journal (德華醫報), edited by Dr. C. Y. Sun (沈乾) (933).

Interest evoked by these various educational enterprises amongst impartial observers is shown by the fact that a commission of five, appointed by a British China Missions Emergency Committee in 1907 demanded in its report that the sum of £100,000 be used for medical and other colleges (934).

The progress made between the years 1900 and 1910 in the *training of nurses* kept pace with the evolution of educational institutions for medical students.

Shanghai. Early information is available in regard to *Shanghai* where according to a report published in 1901 (935) a small training school for nurses at St. Luke's Hospital existed. It had been started with the liberal help of Mr. Coffin of Philadelphia and Trinity Church in the same community.

Canton. In 1902 the *Julia M. Turner Training School for Nurses* was organised in connection with the David Gregg Hospital at *Canton*. It offered a curriculum of two years. Up to 1909, when the second graduation was held, four pupils had successfully passed. At the same time (1909) eleven were in training (936).

(932) According to a report published in 1900 (China Med. Miss. JI., p. 208) Dr. Kuehne had not less than 14 students who were in training with a curriculum of four years. The best received a salary during the last year.

(933) China Med. Miss. JI., 1906, p. 274; Information procured by Dr. C. S. Lin.

(934) Latourette, l.c., p. 681.

(935) China Med. Miss. JI., 1901, p. 24.

(936) China Med. Miss. JI., 1906, p. 271; Chin Med. JI., 1909, pp. 118, 329, 1926, p. 776.

Hankow. About the year 1902 a fully qualified English nurse was introduced into the Men's Hospital at *Hankow*—an innovation which evoked "much criticism, opposition and evil prognostications from Jeremiahs" (Tatchell). With her help steps were taken to provide for the proper training of *male* nurses, the minimum course being three years. After the initial difficulties had been overcome, many pupils applied; they were accommodated in the Hodge Memorial Nurses' Home, connected with the hospital of the same name (937).

Chungking. Early attempts to train nurses were also made in the General Hospital of the Methodist Episcopal Mission at *Chungking* where in 1902 three young men took theoretical and practical instruction for three years (938).

Peking. At *Peking* the medical women of the London Missionary Society and the American Presbyterian and Methodist Missions joined forces to continue on a larger scale the training of nurses inaugurated by Dr. Saville. A *Union School for Nurses* was opened in October, 1906. A year and a half later the London Missionary Society, having no woman physician in the field, had to withdraw but the work was continued by the two American Missions.

In 1909 the teaching staff comprised Drs. Gloss and Leonard as well as Nurses McKillican and Powell. The course was one of three years, practical work being done throughout and lectures given for the first two years. The first pupil graduated from the Douw Hospital of the American Presbyterian Mission in 1910 (939).

The school, which still exists now, has a curriculum of four years, one year of high school work being required for admission. Up to 1930, 15 students had graduated from the Douw Hospital while thirteen were still in training (940).

Tientsin. Dr. Y. May King (Yamei Kin), who after an unhappy marriage had obtained a divorce in 1904, proceeded in 1905 to Chengtu in Szechwan and stayed there until 1907, and then, with the aid of a grant amounting to Tls. 20,000 from Viceroy Yuan Shi-k'ai, she opened a school for nurses at *Tientsin* City (East Gate). Here she continued until 1915 when she went as publicity agent to the United

(937) Tatchell, *China Med. Jl.*, 1912, p. 271.—In a survey published in the *Journal* in 1909 (p. 118) reference is made to a Union training scheme adopted at *Hankow*. No further information could be elicited on this point.—Another hospital where female personnel was early employed was that of Dr. Todd at Canton (*China Med. Jl.*, 1910, p. 132).

(938) *China Med. Miss. Jl.*, 1903, p. 123.—From a report published in 1916 (*China Med. Jl.*, 1916, p. 352) it can be gathered that training of female nurses had been taken up in the William Gamble Memorial Hospital for women and children of the Methodist Episcopal Mission at *Chungking* under Lillian L. Holmes, Superintendent and Agnes M. Edmonds, M.D.

(939) *China Med. Miss. Jl.*, 1906, p. 188; *China Med. Jl.*, 1909, p. 344, 1910, p. 423.
(940) 1930 Directory of the Nat. Med. Assoc., Peiping, pp. 88-89.

States(941). After her return to China Dr. Yamei Kin made her home in Peiping, taking great interest in sociological activities like the Municipal Orphanage and the Chingho Village Experimental Centre. She died on March 4, 1934.

Hangchow. The history of the *Maternity Hospital and Training Home for Midwifery* at Hangchow is a commendable one. Dr. Main had for many years wished for this branch of the work to be opened but felt that the Chinese gentry should move in the matter. In fact Mrs. Kao, a lady prominent for her good works among the poor, conceived the idea of starting such an institution with the aid of Dr. Main's assistant Liu Ming-ts. With the co-operation of Chinese and foreigners some buildings were prepared and the school was opened in July, 1906. Lectures on anatomy, physiology and midwifery were daily given by Drs. Main and Liu, while practical instruction was left to Mrs. Main and Nurse Morris who had recently arrived from England. Care was also taken to instruct the pupils how to vaccinate and to treat cases of opium poisoning.

The Training Home became soon well known so that many patients and students came. The latter also undertook district work which enhanced the reputation of the institution. The first graduation was held in April, 1908, when Mrs. Kao presented each candidate with a fully stocked medicine and instrument case(942).

Anking. Student nurses, both men and women, were admitted at Anking as soon as the magnificent St. James Hospital for 100 beds, erected at a cost of G\$25,000 under the auspices of the American Church Mission, was opened in October, 1907(943). Regular training was started in February, 1908. A good knowledge of Chinese was required for entrance from the pupils who had to go through a three years' course and then serve the mission for an additional two years. Instruction was in Chinese, but elementary English was also taught. Dr. H. B. Taylor supervised the school while Miss M. R. Ogden had charge of the women and Miss S. C. Tomlinson of the men, both sexes being separated, even during lectures. Allowances ranging from fifty cents to six dollars per month were paid to the pupils under training (944).

(941) Personal information.—Dr. Gloss, apparently alluding to this establishment (China Med. Jl., 1910, p. 423) wrote:—"In Tientsin in 1907 the Chinese government opened a school to teach nursing and midwifery. It is called a Medical College, after the manner of the Chinese, but it still does not attempt to give a full medical course."

(942) Kingston De Gruche, Dr. D. Duncan Main of Hangchow, pp. 74-75.

(943) A semi-foreign building to accommodate 30 patients had been erected in 1901 and was for a time under Dr. Edmund Lee Woodward (see China Med. Miss. Jl., 1903, p. 87; China Med. Jl., 1907, p. 253; A Century of Prot. Miss. p. 305).

(944) China Med. Jl., 1909, p. 344.

Full training to students was also given at Anking on a limited scale. At least it is on record(945) that when the new hospital was opened in 1907, the Governor presented certificates to Drs. Yong and Hung who had worked for six years and completed a medical course in *English*.

Nanking. The *Nanking Union Nurses' Home and School* opened its doors on October 5, 1908, its Faculty being headed by Dr. Lucy A. Gaynor of the Friends' Hospital. A regular course of three years was provided for the graduates of mission boarding schools which was prolonged to four or five years in the case of undergraduates. Instruction was given according to the plan outlined in Isabel Hampton Robb's "Nursing: Its Principles and Practice" which was at the time translated into Chinese. Besides Dr. Gaynor, the teachers were the nurses of the different mission hospitals in the city, Chinese teachers being engaged where necessary. The China Medical Association undertook to give final examinations and to confer diplomas on successful candidates.

In 1912, when Dr. Gaynor died from typhus fever, 18 pupils were in training(946).

Futsing. When in 1901 a Women's Hospital was opened at *Futsing* (near Foochow in Fukien) under Dr. Mabel C. Poulter, endeavours were made to secure and train nurses. In 1908 the systematic training of three pupils in *midwifery* was started while in 1910 the first class of nurses was organised. Dr. Poulter was assisted by Nurses B. A. M. Thomas and A. L. Leybourn.

From a survey published by Dr. Poulter in 1921 (when this meritorious work was stopped), it is seen that the policy of the school was to give instruction in midwifery only to such women as had successfully passed the three years' nursing course. Every endeavour was made to render the pupils as efficient and self-reliant as possible, a special operative course of one year being given to those who had proved themselves capable during the first year of their special training(947).

Foochow. The training of nurses at the Magaw Memorial Hospital in *Foochow* was reorganised in 1909 when the *Florence Nightingale Nurses' Training School* was opened. This was under the superintendence of Miss Cora E. Simpson (1907-22), medical instruction being given by Drs. Lyon and Hatfield.

(945) *Ibidem*, 1908, p. 116.

(946) *Ibidem*, 1909, p. 342, 1912, p. 190.—According to the Century of Prot. Missions (pp. 528-29), the ranks of the American Friends Mission were joined during the time now under discussion by Miss Macgowan, M.D., and Nurse Janet Carmichael who came in 1904 from Scotland. Miss Taung, a third generation Christian, studied medicine under Dr. Gaynor and others for eight years and attained full qualifications.

(947) *China Med. Jl.*, 1914, p. 297, 1921, p. 835.

The curriculum of the school extended over three years, the candidates then being eligible for obstetrical training (one year). Teaching was in Chinese with some instruction in the English language. The first class (all members of which took the obstetrical course) graduated in 1914(948).

As already stated, the China Medical Missionary Association had agreed in 1908 to hold *examinations* of pupil-nurses who had gone through a three years' course and to issue *certificates* to successful candidates. The first examination of this kind was held in November, 1908 when all three students present passed successfully. Another was held in 1910 at the hospital of the American Baptist Mission at Hanyang and on November 3 of the same year, certificates were presented to a number of nurses from different parts of the Yangtse Valley(949).

Significant as these endeavours to unify the work were, their importance is overshadowed by the foundation of the *Nurses' Association of China*.

The inception of this organisation goes back to November, 1908, when Dr. Cousland published in the China Medical Journal a letter written by Miss Simpson where it was said:—

We have never trained any nurses in this part of China. We have always trained medical students in the hospitals instead, but now I think the time is ripe in China for medical students to take their training in the medical colleges and give place to the hospitals for the training of nurses as we do in the home lands.

The proposal to create an organisation of nurses found ready support from Dr. Cousland who volunteered to act as 'middleman' and receive letters from all interested in the subject. At the same time he offered, on behalf of the editor, space in the China Medical Journal for a 'Nursing Department' until the proposed organisation had a paper of its own.

Meetings of nurses were held at Kuling in the summers of 1908 and 1909 and a beginning was made in the latter year. The first President of the Association was Mrs. Hart of Wuhu (wife of Dr. Hart who succumbed during the typhus epidemic of 1912), the first secretary Miss Maud Henderson of Wusih. In the China Medical Journal of January 1909, Drs. Fulton of Canton and Gaynor of Nanking welcomed the movement; the former translated the work "Nursing in Abdominal Surgery and Diseases of Women" by Anna M. Fullerton into Chinese

(948) Simpson, *ibidem*, 1914, p. 138.—Dr. Thacker (Chuanchow) reported at the 1910 Conference of the China Med. Miss. Assoc. five girls in her hospital who took a five years' course in midwifery and dispensing (China Med. Jl., 1910, p. 119).

(949) China Med. Jl., 1909, p. 122. 1911, p. 61.

(950). A rendition of Hampton-Robb's "Principles and Practice of Nursing," which had been begun by Dr. Eleanor Chesnut (killed at Lienchow in 1905) was completed by Mrs. J. J. Boggs, M.D., and was published in 1909 by the Publication Committee of the China Medical Missionary Association (951). In 1910 Miss Simpson and some other nurses attended the conference of the Medical Association held at Hankow in February.

For the first three years the life of the Nurses' Association hung in the balance. New impetus was given to it in 1912 by Miss Gage, then a refugee at Shanghai. She called together a meeting at Kuling for summer, 1912. The convening committee consisted of N. Gage, M. Murdock, A. Clarke, F. Harris, A. Lowe, E. Hope Bell and C. Simpson. Miss Gage was elected president and Miss Clarke, secretary. Plans were made for the registration of schools of nursing, the compilation of a standard curriculum, the holding of national examinations and the awarding of association diplomas. It was also proposed to hold a national convention in Shanghai in 1914.

This meeting actually took place and at this first *National Conference* a Chinese name for the Association was chosen by Miss Elsie Mawfung Chung (later Mrs. Bayard Lyon), the first Chinese nurse to receive her training abroad (she had graduated at Guy's Hospital, London, in 1909). In 1914 *Registration Certificates* were granted to schools considered up to standard; these were the Magaw Hospital, Foochow; Mary Black Hospital, Soochow; Shantung Road Hospital, Shanghai; and Dragon Hill Hospital, Foochow.

In 1915 the first examination was given to seven nurses. The three candidates who satisfied their examiners and received diplomas of the Association were:

Wang Fok Chen (汪福貞) Women's Dept., Church General Hospital, Wuchang;
Yang Shao Kuen (楊紹坤) St. James' Hospital, Anking;
Sung Jui Ch'ing (宋瑞卿) St. James' Hospital, Anking.

The endeavours of the Association to issue *journals* of its own, initiated in 1918 and leading to complete success two years later, will be discussed in due course.

Great progress was made at the 1922 Hankow Conference when arrangements were made for the *admission of Chinese members*, a *Committee on Nursing Education* was created and a full-time General Secretary appointed. This post was entrusted to Miss Cora E. Simpson. At the same time the Association was admitted to full membership in the International Council of Nurses.

(950) A *Manual of Nursing*, prepared by members of the Central China Branch of the Medical Missionary Association had come out a few years earlier (see Review, China Med. Miss. J., 1906, p. 86).

(951) This book was in due course revised and re-issued by the committee which also published other works on nursing in Chinese.

At the 1925 Conference of the China Medical Association the organisation of Nurses was invited to become a member of the Council on Health Education for China.

Most gratifying was the progress recorded at the conference held in Shanghai in February, 1930. Membership had almost reached 2,000, but only 200 missionary nurses were reported as against nearly seven hundred three years previously. All the officers of the Association were Chinese Nurses and at the request of the Government, the Headquarters was moved to *Nanking* where an Office was allotted to Miss Mary Shih, the General Secretary, in the Ministry of Health Department. At the same time Miss Shih was appointed *Director of Nursing in China* and presented with the badge of the Health Ministry. The Minister, Dr. J. Heng Liu assured the Association of his fullest sympathy and enlisted its co-operation(952).

Though in the foregoing pages we have repeatedly dealt with the activities of the *China Medical Missionary Association*, it is now advisable to reconsider its work more comprehensively.

A meeting of the Association was held at Shanghai in February, 1905, under the presidency of Dr. J. B. Neal and attended by 38 doctors. Apart from the work in connection with nomenclature and the journal three *Chinese corresponding members* were elected, viz. Drs. M. Y. Kyong, E. Day (?) and T. K. M. Siao(953). The question whether *full* membership should be granted to Chinese graduated in China soon attracted attention, the discussion being continued in the Journal for 1908(954).

The next conference of the Association was held in April 1907 at Shanghai. Besides resolving to change the name of the Journal and appointing Dr. Cousland as Chinese Editorial Secretary, a permanent commission was appointed under Dr. Maxwell to *centralise research work* and resolutions were formed defining the views of the Association in regard to the *opium and alcohol problems* and their regulation (955). A Research Committee had been appointed somewhat earlier in the year by the newly-founded Mid-China Branch of the Association. The first subject chosen for common work was an investigation of feces for parasites, an Interim Report on this being published in 1908 and a final one in 1910(956).

(952) *A Century of Prot. Miss.*, p. 384; *China Med. Jl.*, 1909, p. 118, 1910, p. 81, 1923, p. 182, 1930, p. 287; C. E. Simpson, "A Joy Ride through China for the N.A.C.," Shanghai, *passim*; *Quarterly Journal for China Nurses*, Oct. 1927 (Vol. 8, No. 3), p. 17.

(953) *China Med. Miss. Jl.*, 1905, p. 37.

(954) *P.* 191.

(955) *China Med. Jl.*, 1907, p. 136.

(956) *Ibidem*, 1908, p. 213, 1910, p. 163.

The 1907 meeting was held simultaneously with a *General Missionary Conference*, convoked as a centenary celebration of Morrison's coming to China. Here also some attention was paid to matters medical, among the topics discussed being the necessity for a high standard of preparation of the missionary physicians and for unification of medical educational work. Medical literature, the campaign against opium, the care for insane and lepers were dealt with (957). A book treating the history of Protestant missions in China since 1807 was presented to the Conference which—though certain parts of it might have been written with greater accuracy and completeness—contains in general valuable information on the history of modern medicine in China. The work was edited by D. MacGillivray of the Christian Literature Society for China and printed in Shanghai at the American Presbyterian Mission Press.

At the Triennial Conference held in Hankow, February 19—24, 1910, 68 of the 400 members of the China Medical Missionary Association were present. Dr. Cousland was elected President, Dr. Davenport Secretary and Treasurer, Dr. Jefferys (assisted by Dr. Davenport) Editor of the Journal, and Dr. Maxwell, Special Commissioner for Research.

The Conference deliberated, among other topics, upon the setting of common standards for medical education, the unification of hospital work of missions occupying the same or adjacent territories, the necessity of making use of laboratory methods. Appreciation of the stand taken by the Chinese and British Governments against the opium evil (see below) was expressed and ways and means discussed how to assist them in their tasks.

No decisive action was taken in regard to the admission to active membership of Chinese graduated from local schools but a committee on standards was appointed to investigate the problem and report to the next conference. Likewise it was confirmed that non-missionary foreign graduates were eligible as honorary members only. The following were actually nominated for honorary membership:—

Dr. Thomson, Hankow.
Dr. Aird, Hankow.
Dr. Skinner, Hankow.

Dr. Wu Lien-teh, Tientsin.
Dr. Douglas Gray, Peking.
Dr. Gattrell, Peking.

Dr. F. C. Yen, who—after having served as medical officer with the Chinese labour corps in South Africa—had graduated *cum laude* from Yale University, U.S. in 1909 and afterwards obtained the D.T.M. degree, Liverpool, was admitted to active membership.

The thanks of the Conference were expressed to the China Emergency Appeal Committee for the large grants of money given to Union Medical Schools and the Publication Committee, and also to

Mr. Henry S. Wellcome for a gift of £1,000 for the purposes of the latter(958).

A branch of the Association was installed at *Kuling* in 1905, followed early in 1907 by the *Mid-China* Branch, later in the same year by one in *Manchuria* and in December, 1908, by one at *Peking* under Dr. Aspland as President. A *Fukien Medical Association* had been organised in 1903 but did not join the central society(959).

Last, but not least, record must be taken of the contributions of the Association and its members to *public health work*. In 1900 Dr. T. Gillison discussed in the *Journal*(960) the question of infectious diseases, especially the desirability of establishing isolation hospitals in each large centre throughout China.

Reference to the need for tracts on public health and posters illustrating such subjects was made in Dr. Hodge's presidential address in 1901(961). Later in the same year a plea for hygiene, especially among Christians, was made by Dr. Kate C. Woodhull. Among other things she recommended that Chinese doctors be appointed as medical officers to boarding-schools, who could at the same time give instruction in anatomy, physiology and hygiene. Dr. Woodhull noted that some interest in public health was evinced by the Foochow officials, at least as far as refuse disposal and similar matters were concerned(962).

In 1905, Dr. P. L. McAll (Hankow), dealing with the subject of medical education among the Chinese(963) also emphasised the need for instructing the population at large in the elements of health—by lectures and distribution of suitable literature as well as by training of nurses.

Action in this direction was first taken by Dr. A. Stanley at Shanghai who published in 1905 a Chinese *leaflet on Tuberculosis* (964). Similar *leaflets dealing with various diseases and public health matters* were broadcast in 1907 by the Central Branch of the China Medical Missionary Association(965). A further step was taken at the 1910 Conference when—as proposed by Drs. Vaughan and Barlow—a *Committee of Medical Propaganda* was appointed by the chairman

for the purpose of dissemination, by tracts and illustrated posters, etc., of popular medical information in schools and other public places.

(958) *China Med. Jl.*, 1910, p. 110.

(959) *China Med. Miss. Jl.*, 1905, pp. 267, 268; *China Med. Jl.*, 1907, p. 273, 1908, p. 213, 1909, p. 121.

(960) *China Med. Miss. Jl.*, 1900, p. 152.

(961) *Ibidem*, 1901, p. 149.

(962) *Ibidem*, p. 274.

(963) *Ibidem*, 1905, p. 93.

(964) *Ibidem*, 1906, p. 39.

(965) *Ibidem*, 1907, pp. 21, 35.

Unfortunately the death of two members of this commission, composed of Drs. Booth, Logan and Meadows, as well as the Revolution, interfered with the scheme so that no decisive action could be taken.

When Dr. J. A. Thomson of Hankow read at the Conference a paper on "A Plea for Greater Care in Avoiding Intestinal Infections during Summer", the hope was expressed by Dr. Graham that steps would be taken to inform the Chinese by lectures, tracts, etc., of the measures advisable to secure *prevention of intestinal infection*.

Attention was also paid to the subject of *school hygiene*. Dr. Tucker expressed the opinion that the missionaries

had not given sufficient care to providing efficient hygienic surroundings for their schools and students,

and emphasised the necessity of (a) refusing admittance to all known tubercular cases, (b) isolating cases of infectious disease instead of sending them back to their homes.

Dr. Booth proposed that rules for the proper medical supervision of schools be drawn by the association and made available to those in charge of the establishments(958).

To complete this survey of public health activities of the missionaries, mention must be made of the foundation, in 1905, of the *Tsinanfu Institute* by the Rev. J. S. Whitewright of the English Baptist Mission. The history of this useful institution goes back to the year 1887 when, in connection with the foundation of a Theological Training School at Tsingchowfu under Whitewright, a small collection of interesting objects was made for the enlightenment of the students. Outsiders soon took much interest in this so that the collection was developed into a museum (1893). This was transferred to Tsinanfu and housed in fine premises erected with money provided by the trustees of the Arthington Fund (about \$150,000).

The new buildings at Tsinanfu covered over three acres and contained exhibits on geography, architecture, chemistry, *pathology*, *hygiene* and geology besides library, reading room and lecture halls. The institute soon attained the fame it deserved, the number of yearly visitors amounting in 1920 to half a million(966).

That with the dawn of the twentieth century a new epoch in the history of modern medicine in China had begun, is proved by the fact that the achievements of the missionaries outlined above represent but a part of the great progress made. The time had come when the soil diligently tilled and sown for almost a century began to bear fruit, the richness of which was almost beyond expectation. Thus it is not surprising to find that at this period, great progress was made in the abatement of the *opium evil*.

(966) Latourette, l.c., p. 641; Encyclop. Sinica, pp. 165, 574; Wu Lien-teh, Nat. Med. J., 1920, p. 124.

As previously mentioned, the missionaries had always deplored the part taken by their compatriots in the importation of opium into China and had—as far as circumstances permitted—tried to stem the tide. This labour, which seemed well-nigh hopeless at times, led to splendid results early in the twentieth century. Hampden Du Bose of Soochow, the President of the Anti-Opium League in China, while in the United States in 1904, stirred up the Department of State to send American consuls in China a circular of enquiry on the opium situation. In 1906 a memorial was prepared by the League and signed by twelve hundred missionaries from seventeen provinces which, through the good offices of the Nanking Viceroy, was presented to the Throne. This document seems to have been the incentive that led the Court to issue in the same year an edict which inaugurated a new and successful campaign against the drug. In 1907 an agreement was made between China and Great Britain by which the two governments pledged each other to bring the traffic to an end within ten years—the one by curtailing the importation of the Indian drug by one-tenth each year, the other by a proportionate reduction of home production. The Chinese government loyally fulfilled its obligation much quicker than was anticipated, both the population at large and those under missionary influences taking the greatest interest in the matter. Among the latter much influence was exerted by the International Reform Bureau, a Christian organisation of American origin which entered China in 1909 in the person of an energetic secretary, Rev. E. W. Thwing, and which aided in the formation of anti-opium societies (967).

Simultaneously with the campaign against opium conducted both by Chinese and enlightened foreigners, great progress was made in other fields by the Chinese themselves.

In 1902 the *Peiyang Sanitary Service* was established by Yuan Shih-k'ai, then Viceroy of Chihli. Sanitary bureaux under modern-qualified physicians were opened in the principal cities of the province, specially at Tientsin, Taku (大沽) and Shan-hai-kwan.

New impetus to public health in that part of China was given through an epidemic of bubonic plague which broke out in September, 1908, in the Cantonese quarter of *Tangshan* and spread to neighbouring villages and towns. An *isolation hospital* was built at Tangshan and a *bacteriological laboratory* opened where anti-plague vaccine was prepared (4,000 inoculations being given during the epidemic under Dr. C. T. Andrew).

Both institutions continued to exist, the laboratory being removed in 1910 to Chinwangtao (秦島皇). During the 1910-11 pneumonic

(967) Latourette, l.c., pp. 659-660.

plague epidemic 35,000 doses of anti-plague vaccine were prepared by Dr. Andrew there and distributed over North China.

The *Tientsin Sanitary Department* (衛生局) in 1909 (when an invasion of plague from the South was threatened) fitted up a temple, situated in an isolated spot of Chinwangtao village, as an emergency hospital and was later granted a site on the Mining Company's land (968).

A *Sanitary Department* was inaugurated at *Pakhoi* in 1905. It was under the control of a board of eight members, four of whom represented the householders of the city and four, the Cantonese shopkeepers. As was usually the case, the energy of the board was at first concentrated upon scavenging of the city (969).

In 1906 a semi-official water company was formed at *Canton* with a capital of Tls. 1,200,000, half of which was supplied by the Government. Filter beds possessing an area of 96,000 square feet were constructed with pumping machinery capable of supplying 8,750,000 gallons per 24 hours and a water tower 110 feet high and with a capacity of 200,000 gallons. The plant was declared open August 16, 1908 (970).

The importance of these local undertakings is surpassed by the establishment in 1905 of a *Sanitary Department* of the central government at *Peking* under the Ministry of Police (later changed into the Ministry of Civil Affairs). It had three divisions, namely, medical protection, quarantine and technical affairs (J. Heng Liu—968).

It was through the influence of this newly-created department that about the year 1906 a beginning was made with the opening of the so-called *Min Cheng Pu Hospitals* in several of China's largest cities.

An enthusiastic description of the three establishments of this kind existing at *Peking*, especially that in Hatamen Street was given in 1912 by Dr. J. J. Mulowney (971). As in the Tung Wah Hospital at Hongkong, the patients coming to these institutions had the choice of being treated by western-trained doctors or old-style practitioners. With the Hatamen hospital, for instance, there were, besides three old-style practitioners (who had been trained in the school outside the Hou Men in Peking): Dr. L. T. Liu (educated in France), Dr. Chiang (Japan), Dr. Liu (Peking and Japan), Drs. Wu, Wang, Na (*Tientsin Govt. School*) and Kung (*St. John's, Shanghai*). The whole staff was

(968) Customs Decennial Reports, 3rd Issue, Vol. I, p. 188; Wu Lien-teh, *National Med. Jl.*, 1923, p. 1, *China Med. Jl.*, 1929, p. 343; J. Heng Liu, *The China Press*, Aug. 29, 1931.

(969) Customs Decennial Rep., 3rd Issue, Vol. II, p. 260.

(970) *Ibidem*, p. 149.

(971) *China Med. Jl.*, 1912, p. 34.

under Dr. L. C. Fu, Sanitary Department of the Board of Interior who had himself studied in England and Germany.

The hospitals cared mostly for out-patients, but considerable numbers of in-patients were admitted as well. Further, the organisation maintained an Almshouse (and orphanage) in the West City to which patients unable to pay even the nominal fees of the regular hospitals were sent. In connection with this institution which was in charge of both a foreign-trained and an old-style practitioner, was a *Refuge for the Insane*. It harboured in 1912, when Dr. Mullooney visited it, 75 patients and was well conducted (972).

The work of these institutions at Peking was continued by the City Hospital located in Chien-liang Hutung, which was recently taken over by the Peiping Municipal Council and thoroughly reorganised (973).

Attention may here be drawn to a curious attempt of Viceroy Tuan Fang (端方) to revive the registration laws of the Ch'ing dynasty according to which

any person found practising medicine without permission from the proper authorities is liable to a fine not exceeding \$500 (Provisional Civil Code, Art. No. 296—法典草案).

The article not being further enforced, Tuan Fang tried in 1908 to conduct state *examinations of the old-style practitioners* at Nanking. About nine hundred of them actually attended and were classified into five groups (excellent, good, fair, poor and bad). The first three grades were given a licence to practise, the best being permitted to have their names registered with a view of obtaining at some future date official appointments. The two lower grades were prohibited to practise medicine. Laudable as this endeavour was, it proved practicable for a short period only (974).

Turning to medical activities in connection with the *railways* we must first remember that the Colliery Hospital at Tangshan received soon after its opening in 1885 the support of the Railway Company so that it may be considered as the first railway hospital in China.

In 1900 such an establishment was founded at *Shan-hai-kwan* to take care of the employees of the Luanchow-Chinchow section, Government Railways. It soon came under Dr. Andrew. British medical officers were also stationed in other important cities along the Peking-Mukden line, as Peking, Tientsin, Chinwangtao and Mukden. In 1907 Dr. H. V. Wenham, M.B., F.R.C.S. who had worked at St. Bartholomew's,

(972) A committee considering the foundation of a hospital for the insane in North China in 1911 also came to the conclusion that this work should be left in the hands of the Government institute (China Med. Jl., 1911, p. 339). —Unfortunately the good standard of the asylum does not seem to have been kept up for long (see Ingram, *ibidem*, 1918, p. 153).

(973) 1930 Directory of the Nat. Med. Assoc., Peiping, pp. 27-28.

(974) Hume, *Addresses, etc.*, read at the Dedication Ceremonies of the Union Med. College, Peking, 1921, p. 85 and information procured by Dr. C. S. Lin.

London, was given the position of Chief Surgeon, but he preferred missionary work and soon took an important part in the work of the Union Medical College at Peking.

The Tientsin-Pukow Railway, built under joint British and German auspices, was completed in 1908, and establishment of hospitals at strategic points like Tientsin, Tsinanfu, Pukow (浦口), was an important feature of the undertaking. The first C.M.O. was Dr. Robert Yu, a graduate from America, who was stationed in the Chinese city at Tientsin.

The Shanghai-Nanking Railway, opened to traffic at the same time (1908), installed a medical service under British doctors. Among others it opened in April, 1909, a small hospital at *Chinkiang*. It was principally intended for the treatment of railway servants, but other patients, both foreign and Chinese, were received as well. Though not well supported by the community, it did—with the help of a grant from the Municipal Council—useful work, especially during the Revolution, when it was made the headquarters of the Red Cross Society.

It may be said in general that laudable work is performed by the medical staff of the Chinese Government Railways not only for the employees but for the population at large. Especially worthy of praise is the part they take in the fighting of epidemics (975).

Two systems deserving special discussion are the Chinese Eastern and South Manchurian Railways.

The *Chinese Eastern Railway* connected the Siberian-Manchurian border-station Manchouli in the West with Pogradichnaya (and Vladivostok) in the East and also its central station Harbin with Dairen and Port Arthur, the whole line before the Russo-Japanese war being under the administration of the Russians to whom political power in the railway area had been ceded.

Though medical activities in connection with the railway began in 1898 when construction work was started, it possessed then only a few physicians (among them Dr. F. A. Jasinski, afterwards the esteemed chief-physician of the railway) and one temporary hospital in Harbin (哈爾濱). Early in the twentieth century a beginning was made to build up a permanent organisation which not only provided medical treatment to the employees but was also entrusted with public health work in the railway settlements. The scope of the work was somewhat restricted when after the Russo-Japanese war the line south of Changchun came under Japanese influence. Far-reaching changes began when after the Russian revolution the extraliquity privileges of the Russians in Manchuria were abolished. Nevertheless, the Chinese Eastern Railway continued with not only the medical care

(975) Customs Decenn. Rep., 3rd Issue, Vol. I, pp. 188, 422 and personal information.

of their army of employees but was still, in a limited degree, entrusted with preventive work in the settlements of the Special (formerly Railway) area.

From a survey published in 1927(976) it can be gathered that the railway, which is over 1,821 kilometres long, had been divided into 14 medical districts with hospitals fully equipped. The largest of these were situated in Harbin (Central Hospital with departments headed by specialists), Hantao-hotse (横道河子), Manchouli (满洲里), Hailar (海拉尔), Bukedu (博克图), Fulaerdi (富拉尔基), and Pogranichnaya (Suifenho—绥芬河). A personnel of 574 were employed thus:—Physicians 36, medical assistants (feldshers) 67, midwives 67, nurses 18, chemists, 15, dentists 5, roentgenologist 1, administrative services 45, attendants 320. In addition, 12 physicians were engaged for school hygiene work. While the higher staff was formerly composed of Russians, gradually the principle of employing an equal number of Chinese and Russians had been put in practice. The medical and sanitary department has been since 1925 under a Chinese chief (at first Dr. Wei Likun, March 1, 1925-May 1, 1930, who was succeeded by Dr. Li Mung-hu).

Attached to the central medical office in Harbin was a sub-bureau for sanitation headed by two physicians who, on the one hand, were entrusted with the direction of preventive and health work within the sphere of the railway and, on the other, acted as *liaison* officers with other authorities, notably the Manchurian Plague Prevention Service.

The budget of the railway medical service during the years 1920-27 was over a million gold roubles, so that 38 roubles were spent on every employee or—taking their families into account—15 roubles per head. The average expenditure of the medical department during the last five years up to 1930 was Gold roubles 1,132,167(977).

The Japanese authorities, when taking over the railway south from Changchun after the 1904-5 war, adopted the principle of leaving

(976) Wei Likun, Transactions of the 7th Congress, Far Eastern Assoc. of Trop. Medicine, Vol. I, p. 791.

(977) Two general hospitals established at Harbin under the Russian administration were:—

- (a) The Red Cross Hospital, opened under Dr. F. von Rauppach in 1909 in rented premises and transferred in 1912 to an excellent building near the Sungari River. This establishment was taken over by the Chinese authorities in 1929 and served as the centre and clinical hospital of the Harbin Medical School.
- (b) The Municipal Hospital. Originally intended for the treatment of venereally diseased prostitutes (and in fact built principally with the aid of the contributions made by these women towards their medical treatment) it was opened to the general public in 1913. Several pavilions housing the specialities were gradually added to the well-built main block of the establishment which was taken over by the Chinese Municipality in 1926. Though still serving principally for the needs of the Russian community most of the doctors employed now are Chinese.

medical and sanitary matters largely in the hands of the newly-formed *South Manchurian Railway Company*. The Government itself maintains, however, a hospital at Port Arthur, housed in the excellent building of the former Russian Red Cross hospital as well as isolation hospitals at Dairen and Port Arthur. Matters concerning quarantine and hygiene in the two just-mentioned ports fall under the jurisdiction of the Marine Bureau, Kwantung Government, in Dairen.

The Railway has a central Medical and Sanitation Office at Dairen, connected with which is a magnificent Hygienic Institute (1927), both being under Dr. Shoji Kanai. Health Officers are also kept at principal centres at or near the railway like Newchwang, Mukden, Changchun, Fushun (撫順) and Antung. In addition a number of Public Physicians, whose duties also comprise health work, are stationed at other places in which school physicians are also employed. In 1918 Sanitary Committees were formed at each District Agency.

Railway hospitals were built in all important centres, some (Shakako, Newchwang (978), Mukden and Changchun) possessing branches in the Chinese cities to render aid to the population. The expenditure for these hospitals in 1923 was Yen 3,259,186.68 and the receipts 2,486,179.93 so that a deficit of more than three quarters of a million had to be covered by the company (979).

To help the inhabitants of South Manchuria in their terrible plight during the Russo-Japanese war, an *International Red Cross Committee* was founded in Shanghai. Over 500,000 taels were collected—mainly from Chinese sources—by this organisation, the foreign secretary of which was Timothy Richard, D.D. With the funds left at its disposal at the close of the war, a hospital was founded at Shanghai, the direction of which was entirely vested in the hands of the *Chinese Red Cross Society*. This was recognised by the Chinese Government in 1907 and the appointment of Sheng Hsuan-huai as President was confirmed.

In connection with the Central Committee in Shanghai, a Red Cross and Refugee Aid Society was formed in *Newchwang*, the work of which was restricted to the care of Chinese wounded. The missionary doctors in the province all placed their hospitals at the disposal of the Society which in its turn liberally supplied them with surgical dressings, antiseptics and other perquisites. After the battle of Liao-

(978) At Newchwang a Japanese Government Hospital was opened in 1907, but for lack of funds, was handed over to the Rly. Co. in 1913. A former Russian hospital was taken over by the Chinese administration and supported by the Chamber of Commerce (Customs Decennial Rep., 3rd Issue, Vol. I, p. 140 and 4th Issue, Vol. I, p. 109).

(979) The above information is mainly culled from M. Tsurumi, *A Glimpse of Public Hygiene in South Manchuria*, Dairen, 1922, 1925.

yang. Dr. Westwater attended over 300 Chinese wounded locally and Dr. Christie over 200 in Mukden(980).

We now pass on to a contemplation of *hospital activities*.

Canton. Dr. Kerr on his death-bed entrusted the care of the Insane Asylum at *Canton* to Dr. C. C. Selden who in 1910 gave an interesting account(981) of the work in which he was assisted by Dr. Hofmann. While it had been Kerr's original plan to admit such patients only who were brought by their relatives or friends, from 1904 onwards the police began to send cases for which they paid. From the next year patients were also admitted by order of Chinese magistrates who, like the police, undertook to defray the expenses for their cases. Under these circumstances the institution which by 1909 had five buildings, was filled with patients so that two matsheds had to be erected to receive the overflow. A grant of \$1,000 was received through the Viceroy from the provincial treasury for erecting a new building, while the Police department gave \$4,200 for the same purpose.

Since 1898, 1,458 patients had been admitted. In 1909, 239 cases entered and 198 were discharged, 49% cured—certainly a most gratifying result.

The running expenses of the institution—with the exception of the physicians' salaries—were entirely met by payments from the patients. The charges for patients with ordinary board were low (\$5 per month with clothing) but room rent paid by well-to-do patients for private accommodation came in usefully.

Shortly before and during the time now under review, great improvements were made in the Canton Missionary Hospital. It must be realized that, splendid though the achievements of Parker and Kerr had been, only very gradually arrangements were introduced in the work which are now considered inseparable from our conception of a hospital. As can be gathered from the account of Cadbury and Jones, an operating theatre with arrangement for antiseptic work was fitted up in 1896 which remained in use until removal into the new hospital building in 1935. In 1898 laundry and bathrooms were added. The first reliable sterilizer was purchased in 1903. There is no doubt that an important role in the introduction of these improvements was played by Dr. Swan who also laid great emphasis upon a proper routine in the operating room. Mrs. Swan took over the management of the kitchen, bringing about a great improvement. In 1905 the private

(980) Brander, Customs Med. Rep., 68th-80th Issues, p. 10; China Year Book, 1913, p. 457; China Med. Jl., 1925, p. 284; Latourrette, l.c., p. 607. According to a piece of not otherwise confirmed information (National Med. Jl., 1925, p. 366) the Pun Yu Red Cross Hospital was opened at Canton in 1904. Three Red Cross Associations were founded in 1910 (Customs Decenn. Rep., 3rd Issue. Vol. II, p. 150).

(981) China Med. Jl., 1910, p. 325.

room patients were for the first time required to eat from the hospital kitchen, the cost of the food being \$0.15 a day.

Dr. Nye Sik-pang, a son of the former vice-president, Gideon Nye, and graduate of the Canton Medical School, replaced in 1902 Dr. C. C. Chang (resigned) on the staff of the missionary hospital and stayed until 1910 (982).

In 1907 the Canton Medical Missionary Society attempted to provide its own doctors for the hospital which from 1855-1907 had been staffed by the American Presbyterian Board. The resources of the Society being inadequate this attempt was soon abandoned (983).

When the Canton Christian College was moved in the year 1904 to a new site at Lingnan the college physician Dr. A. H. Woods opened a dispensary for the village people. In 1906 the Christian Association of Pennsylvania University undertook to carry on this work together with their other activities in the college. The dispensary was kept open by them and their successors until 1914 when the village work came to a temporary standstill (984).

New hospitals opened at Canton may thus be tabulated:—

Year:	Name of Hospital:	Reference:
1900	Franco-Chinese Hospital	Nat. Med. Jl., 1925, p. 366.
1904	Ng Hong Chee Memorial Hospital	"
	Pun Yu Red Cross Hospital	(980)
1905	French T'o Mei Hospital	Customs Decenn. Rep., 3rd Issue,
	中法緬美醫院	Vol. II, p. 150.
1906	Kuan I Hospital	"
	軍醫留醫院	
	Municipal Hospital	Nat. Med. Jl., l.c.
1908	T'o Keung Maternity Hospital	Customs Decenn. Rep., l.c.
	圖強	
	Leung Thet Dispensary	"
	兩專施診濟所	
1910	Kwong Wa Hospital	"
	光華醫院	
1910	Wa Tsai Maternity Hospital	"
	華濟保產講習所	
1910	Foo Ue Maternity Hospital	"
	婦孺醫院	

Satisfactory progress in other directions was recorded by *Shanghai*. From Dr. Stanley's Health Report for the year 1901 we note that besides lymph for vaccination, diphtheria antitoxin and rabies vaccine were prepared in the laboratory (985).

(982) China Med. Miss. Jl., 1903, p. 120; Canton Hospital Reports for 1916, p. 71, 1917, p. 116. (From these reports and Cadbury and Jones' book it can be gathered that Dr. Nye, who had entered the medical college in 1888, joined the hospital staff immediately or soon after graduation, carrying on with brief intervals by private practice until 1910 or 1911.

(983) Canton Hosp. Rep., 1916, p. 70, 1919, p. 118.

(984) Report of Lingnan Hospital, June, 1925.

(985) See China Med. Miss. Jl., 1902, p. 199.

In 1904 an *isolation hospital* for foreign cases, a *disinfection station* and a *public mortuary* were provided in the International Settlement at a cost of upwards of Tls. 200,000. Two years later (1906) a hospital for mental cases among foreigners requiring nursing and seclusion was built in connection with the Victoria Nursing Home, followed in 1908 by a hospital for the Indian police and one year later by an establishment for the Chinese police and prisoners (986).

The *Shanghai Public Hospital* was opened in 1910 with the object of giving free medical aid to patients unable to afford a doctor. In its early days the task of finding sufficient money to meet current expenses entirely rested upon the late Mr. Li Ping-soo (李平書) the founder of the institution. Only in 1920 was it possible to obtain support from the community. Since that time it has been under the control of a Board of Directors, who are responsible for its financial support as well as its administration. The hospital is not only provided with facilities for giving specialist services but opens special wards every summer to take care of patients with cholera and other diseases prevailing during the warm season (987).

A *Gate School and Dispensary* was opened at St. John's College in April, 1906. Here treatment was given to the population of the surrounding district by Dr. Lincoln and Mr. Tseu (988).

A noteworthy undertaking was the *Door of Hope* (濟良所), a rescue home for Chinese girls, formally opened in November, 1901. The founding of this institution was principally due to the initiative of Miss Cornelia Bonnell, a graduate of Vassar. While teaching at Shanghai in a private school for foreign children, she became impressed with the unhappy condition of Chinese prostitutes. Accordingly she resigned her position and in 1900 became the superintendent of the work which was then instituted by five missionary women. It was divided into four distinct branches, as follows: a Receiving Home in Foochow Road, where girls were kept until their cases were settled at court; a Home, in which girls over fifteen remained for their first year, during which part of their time was given to study and part to training in Chinese cooking and sewing; an Industrial Home, in which girls who had passed a year but were not prepared to leave, could support themselves by foreign needlework; a Children's Home for girls under fifteen.

(986) Customs Dec. Reports, 3rd Issue, Vol. II, p. 24, 1930 Directory of the Nat. Med. Assoc., Shanghai, p. 71.

(987) 1930 Directory of the National Med. Assoc., Shanghai, p. 63.—In the Customs Decenn. Rep., 4th Issue, Vol. II, p. 43, it is maintained that this hospital was founded by Miss Chang and was handed over to the local administration in 1913, part of the annual expenses being defrayed from the proceeds of local public properties (公產).

(988) China Med. Miss. Jl., 1907, p. 78.

The need for an institution of this kind was so evident and its work so laudable that from the first it received the generous support of the Chinese gentry as well as foreigners and the Municipal Council of the International Settlement. The expenses of the Receiving Home especially were met by a Chinese committee under H. E. Shen Tun-ho.

During the first ten years of its existence the Door of Hope received and cared for about a thousand women and had aided a large proportion of them to begin a wholesome life.

In October, 1906, a committee was formed for the rescue of foreign girls (989).

Dr. C. J. Davenport was transferred towards the end of 1904 to Shanghai as superintendent of the *Shantung Road Hospital*. Here he worked with greatest distinction until his sudden and deplored death on September 4, 1926 (990).

Dr. Mary Newell of the Woman's Union Missionary Society of America in May, 1905 joined the staff of the *Margaret Williamson Hospital* which celebrated its 25th anniversary in 1910 (991).

Dr. Boone at *St. Luke's*, who had an efficient house-surgeon in Wo Qun-zie, was joined in 1901 by Dr. W. H. Jefferys and five years later by Dr. A. W. Tucker. In 1903 the work for women and children was transferred to a special newly-opened plant, the *St. Elizabeth's Hospital* which was under Dr. Juliet N. Stevens and Miss Edith Macgowan (formerly of the Margaret Williamson Hospital). Thanks largely to gifts from Dr. Jefferys' family, a new main building was erected for St. Luke's hospital and opened on October 26, 1904 (992).

Besides a *Home for the Aged* established by the Catholic Little Sisters of the Poor in 1904 deserves special mention *St. Mary's Hospital*, founded in 1908 by Bishop Prosper Paris and eight Sisters of Charity. Possessing at first four modest buildings with a limited number of beds, this institution has steadily grown, possessing since the opening of a large modern wing in 1935 a capacity of 700 beds. The Faculty of Medicine of Aurora University is in charge of the medical and surgical attendance, assisted by the Sisters of Charity. A training school for nurses is attached (993).

Foochow. Miss M. J. Shire, L.R.C.P., was appointed to take charge of the Church of England Zenana Mission's work at *Foochow*. Pending the building of a women's hospital (opened in September, 1905) she saw out-patients. The department for women and children at-

(989) A Century of Prot. Miss., p. 595; Encyclop. Sinica, p. 585; Latourette, l.c., pp. 561, 603.

(990) China Med. Jl., 1926, p. 933.

(991) China Med. Jl., 1910, p. 299; A Century of Prot. Miss., p. 470.

(992) China Med. Miss. Jl., 1901, p. 24, 1903, p. 86, 1905, p. 18; China Med. Jl., 1911, p. 121, 1917, p. 47.

(993) Chin. Med. Jl., 1932, p. 1217, 1935, p. 603.

tached to the American Board Mission hospital, which had been for a time under Dr. Minnie Stryker, was closed for lack of room in 1908.

Dr. Whitney who continued to work at Pagoda Anchorage near Foochow until 1908, in a report published in 1904, spoke highly of the activity of Dr. Ciong at the out-station *Chang-loh* (Tsianglo 長樂).

Dr. Emily D. Smith in 1901 assumed charge of the medical work at *Ing-hok*.

In 1910, a Government *military* dispensary with some limited in-patient accommodation was opened at Foochow(994).

Peking. The regular work of the various missionary bodies at *Peking*, which had been interrupted by the Boxer troubles, was resumed within a few years. At the same time several free dispensaries were opened by the Chinese civil and military authorities(995).

The Catholic *Hospital St. Vincent* in Pei Tang was founded in 1900 to replace the Chala Hospital. Managed by a group of Sisters of Mercy and with a visiting staff of French physicians it was devoted to the treatment of missionaries, the students of Catholic seminaries and schools as well as the poor. The hospital is run up to the present time in a simple but efficient manner. The average number of patients admitted recently was 850 with 90,000 treatments in the dispensary.

The *Hospital Saint Michel*, like that of St. Vincent built by the Lazarists, is situated at the west-end of Legation Street. When opened in 1902 it had a capacity of 34 beds as well as a dispensary for out-patients, an X-ray and electrotherapy room and a pharmacy dispensing medicines to Chinese and foreigners. Alterations were made in 1915-1919 which brought the capacity to 50 beds.

Two French physicians are on the regular staff of the hospital but every qualified practitioner has the right to attend patients he has sent to the hospital. Thus from July, 1914 to December, 1926, patients of 30 different nationalities were treated, the Chinese, however, outnumbering others in the proportion of three to two. The annual average for the period was:—550 in-patients and 25,000 in the dispensary. Apart from an almost nominal subsidy of francs 11,000 from the French Government, the institution is self-supporting.

A third Catholic charitable undertaking at Peking is the *Hospice of Tung Tang* opened in 1904 with 60 beds to shelter destitute old men and women. A limited number of out-patients (annual average 700) is also recorded(996).

(994) A Century of Prot. Miss., pp. 57, 259; China Med. Miss. Jl., 1904, p. 180; Customs Decenn. Rep., 3rd Issue, Vol. II, pp. 97-98.

(995) China Med. Miss. Jl., 1906, p. 148.

(996) Bussière, Nat. Med. Jl., 1928, pp. 17-19.—The *Jentsutang* Orphanage, which was partly destroyed in 1900, was restored in 1901.

The medical work for women of the American Presbyterian Mission was reopened in 1902 with a proper hospital in Erh T'iao (Second Street), named after Miss D. M. *Douw*.

The Johns Hopkins Memorial Hospital, a generous gift from the family of that name in Massachusetts, was opened in 1903 by the Methodist Mission at the corner of Hatamen and Legation streets. It was in 1906 under Drs. N. S. Hopkins and G. D. Lowry. Affiliated to this institution was a sanatorium for tuberculous patients, founded and directed for many years by Dr. Hopkins.

The Church of England Mission opened in 1906 St. Luke's Hospital and Dispensary under Drs. Wm. Harold Graham Aspland and Wu (997).

Formosa. A distinguished career was begun when in 1901 Dr. James L. Maxwell came to *Tainan* in Formosa. He was able to transform the hospital there, which upon his coming was run on the lines of the old missionary institutions, into an up-to-date establishment which was not only self-supporting as far as current expenses were concerned, but found the means locally for new extensions. Dr. Maxwell continued at *Tainan* until 1923 when he was appointed Executive Secretary of the China Medical Association. His successor was Dr. Cheal.

Dr. P. Anderson of the English Presbyterian Mission was transferred in 1903 to Takow to take charge of the hospital (998).

Hangchow. The activities of the missionary hospital at *Hangchow* were not totally interrupted by the Boxer troubles. While Drs. Kember and Babington (999) acting in the absence of Dr. Main decided to discharge the in-patients, the Chinese assistants (1000) volunteered to keep open the dispensary.

The hospital for lepers was removed in 1903 to a site in the country beside the West Lake. Further innovations were a Convalescent Home for men and a similar establishment for women (1001).

Ichang. The *Rankine Memorial Hospital*, named in honour of its principal promoter, the late Dr. Rankine, was opened in 1901 under Drs. Stooke and Graham. The clinical work grew to such an extent that in 1906 the theoretical training of students had to be given up. Sad to relate, Dr. Stooke's useful life was cut short in 1908 by an attack of cholera (1002).

(997) China Med. Miss. Jl., 1906, p. 148; Cormack, *ibidem*, 1926, p. 525; Encyclop. Sinica, p. 118; Van Allen, Chin. Med. Jl., 1934, p. 792.

(998) China Med. Jl., 1924, p. 134; A Century of Prot. Miss., p. 192.

(999) Dr. Kember had come in 1894, Dr. Babington in 1899.

(1000) Among them, Drs. Liu and Tsang, who took a prominent part in the training of students, deserve mention (China Med. Miss. Jl., 1900, p. 288).

(1001) China Med. Miss. Jl., 1902, p. 151; China Med. Jl., 1930, p. 790; Kingston de Gruche's book, *passim*.

(1002) China Med. Miss. Jl., 1902, p. 154, 1906, p. 97; A Cent. of Prot. Miss., p. 203; China Med. Jl., 1908, p. 375.

Wuchang. A hospital for women was opened in February, 1903, by the Wesleyan Methodist Missionary Society at *Wuchang* under Miss Bennett, M.D., who however, died in October of the same year (1003).

Wenchow. Dr. Hogg at Wenchow was succeeded about 1901 by Dr. W. E. Plummer by whom a new plant, called the *Blyth Hospital*, was opened in January, 1906. Dr. Plummer had a staff of 8 students one of whom acted at the same time as medical officer to an opium refuge founded with the aid of subscriptions from officials and gentry (1004).

Shaowu. Work for men and women was successfully carried on. Dr. Bliss was, according to a 1904 report, bent upon the training of five students. A new hospital was built (1005).

Laoling. Medical missionary activities in the *Laoling* district were resumed after the Boxer rising in 1905 when new hospitals for men and women were opened (1006).

Yangchow. The Southern Baptist Convention started in December, 1904, with out-patients work at *Yangchow*. A proper dispensary was opened in April, 1905, a hospital in 1907 (1007).

Soochow. Most of the information in regard to *Soochow* has been given when dealing with the educational efforts. Dr. Fearn who had acted in Dr. Park's absence went to *Huchow* (1008) while Dr. A. G. Hearn, formerly in charge of this station, came to *Soochow* to assist in the surgical work. In 1909 the surgical department was taken over by Dr. John A. Snell who carried on most meritorious work until his death in March, 1936 (1009).

P'ang-chuang. Dr. Peck left P'ang-chuang on furlough in 1900 and then returned (1901) to Paotingfu, while Dr. H. D. Porter was compelled through failing health to retire soon afterwards. In autumn 1902, Drs. Francis F. and Emma B. Tucker joined the station (1010).

Paotingfu. It is interesting to note that when Dr. Peck came to *Paotingfu*, the provincial treasurer of Chihli Province (Chou Fu) proposed to him to start a medical school after the Tientsin model. It was not possible to realize this plan.

(1003) A Cent. of Prot. Miss., p. 96.

(1004) China Med. Miss. Jl., 1906, p. 114; A Century of Prot. Miss., p. 132; Customs Decennial Rep., 3rd Issue, Vol. II, p. 78.

(1005) China Med. Miss. Jl., 1904, p. 178; A Century of Prot. Miss., p. 260.

(1006) China Med. Miss. Jl., 1906, p. 269.

(1007) Ibidem, 1905, p. 161; China Med. Jl., 1908, p. 118.

(1008) Dr. H. C. Barlow of the Baptist Mission, who came to China in 1906, worked also at first at Huchow but moved afterwards to Shao-hsing, temporarily to relieve Dr. F. W. Goddard. He retired in 1911 (China Med. Jl., 1911, p. 243. In regard to Dr. Goddard see A Century of Prot. Miss., p. 338).

(1009) Ibidem, p. 419; Chin. Med. Jl., 1936, p. 759.

(1010) China Med. Miss. Jl., 1900, p. 288, 1905, p. 259; A Century of Prot. Miss., p. 283.

Hospital work at Paotingfu was commenced in 1902 by Dr. Charles Lewis, at first in a small Chinese building. His outstanding surgical skill attracted many patients so that the foreign hospital building erected by him soon proved inadequate and even the 60-bed Taylor Memorial Hospital was constantly overcrowded. Dr. Lewis continued his meritorious activity until 1931, dying in the following year (1011).

Hoikow. The hospital of the American Presbyterian Church at *Hoikow* under Dr. McCandliss adopted towards the end of the decade now under discussion the policy of catering for its patients and furnishing them with hospital bedding and clothing as soon as they had taken the entrance bath. Medical cases were expected to pay \$5 a month in advance and surgical ones \$6. This policy brought success, a better class of patients attending and their number nearly doubling.

A French Hospital was opened in 1910, preceded for a few years by a dispensary under Dr. Feray. As can be gathered from a report given by Customs Medical Officer J. G. Mouillac in 1922, this hospital was supported by annual subsidies from the Government of Indo-China and the French Foreign Office (1012).

Chungking. At *Chungking* a new hospital of the Methodist Episcopal Mission was dedicated in 1903, followed (as discussed earlier in this chapter) by a special establishment for women and children.

In June, 1902, a large French Catholic hospital was opened, followed in 1906 by a German Hospital, supported by the German Government and in charge of an army doctor (1013).

Tsinanfu. The activities of the American Presbyterians (North) at *Tsinanfu* were assiduously continued both in the McIlvaine Hospital and the establishment for women and children under Dr. Mary L. Burnham. Generously supported by the Chinese the work soon became self-supporting. A Chinese hospital was established by the Governor in the West Suburb (1014).

Pakhoi. The French Government founded a hospital in 1900 at *Pakhoi* which—though not run on such a large scale as Dr. Horder's institution—did useful work and was widely known. A new Chinese hospital, the *Ai Sheng Yuan* (愛生院) was built in 1905. At first a doctor was in regular attendance every day but subsequently the subscriptions fell off and the establishment was merely used to shelter the sick. Both the *T'ai Ho I Chu* and Dr. Horder's hospital continued their benevolent work. The latter was joined in 1906 by Dr. Neville Bradly to replace Dr. Hill who had resigned two years earlier (1015).

(1011) *China Med. Miss. Jl.*, 1902, p. 37, 1905, p. 34; *Chin. Med. Jl.*, 1932, p. 1067.

(1012) *China Med. Jl.*, 1908, p. 48; *Customs Decenn. Rep.*, 3rd Issue, Vol. II, p. 247 & 4th Issue, Vol. II, p. 319.

(1013) *China Med. Miss. Jl.*, 1904, p. 24; *Customs Decennial Rep.*, 3rd Issue, Vol I, p. 271.

(1014) *China Med. Miss. Jl.*, 1905, p. 20.

(1015) *A Century of Prot. Miss.*, p. 41; *Customs Decenn. Rep.*, 3rd Issue p. 261.

Chengt'u. Miss Forrest of the Canadian Methodists Woman's Missionary Society was appointed in 1900 to *Chengt'u* followed in 1902 by Miss F. O'Donnell, M.D. In 1905 the mission decided to open two new stations in their territory, viz. Junghsien and Jenshou (榮縣仁壽). In the former a fine new hospital was opened in 1914 and run in close co-operation with the Chinese: While the Mission provided physicians and had charge of the religious side of the work, the Municipality had control of the patients, collecting fees and paying current expenses. At *Jenshou* a hospital was opened under Dr. J. R. Cox who had been appointed in 1903(1016).

Tungkun. Supplementing the information concerning useful work of the German Missionaries at *Tungkun*, mention must first be made of a new hospital for men, opened in 1904. This was under G. Olpp (arrived apparently in 1898) assisted by Mr. H. Baumann who—qualified in nursing—came out in 1901. Some instruction was given to male nurses. The department for women and children remained at first under Dr. Kuehne in the old building, but was removed to the new site on the East River outside the city within the next years.

In 1905 Dr. Kuehne opened, with the generous help of Governor-General Shan Chun-hun and other Chinese benefactors, a leper asylum where an average of 100 patients was cared for. The services of Dr. Eich having become available since 1906, Dr. Kuehne devoted his whole time from January 1908 onwards to the leper work(1017).

Tsingkiangpu. At *Tsingkiangpu* hospital work was started in December, 1902 by the Southern Presbyterian Mission with accommodation for 24 patients of both sexes. From 1905-1908 Dr. L. S. Morgan participated in the work but then started on his own at *Haichow* (海州). Dr. Woods opened in 1914 a new hospital at *Tsingkiangpu* where he carried on until 1917, being replaced by Dr. L. Nelson Bell(1018).

Changteh. Drs. Logan and Kelly returned to *Changteh* in December 1901. The latter resigned in 1903 to take up work on behalf of the Reformed Church in U.S. at *Chenchow* (辰州) where he built hospitals for men and women.

In 1903 a hospital was opened at *Changteh*, said to be the first modern-built establishment of this kind in Hunan province. Work for women was commenced there after the Boxer troubles by Dr. Jennie Isabelle Dow who carried on almost until her death early in 1927(1019).

(1016) *A Century of Prot. Miss.*, pp. 116, 118-120, 123; *Encyclop. Sinica*, p. 80.

(1017) *China Med. Miss. Jl.*, 1905, p. 201, 1907, p. 10; *China Med. Jl.*, 1909, p. 172.

(1018) *China Med. Miss. Jl.*, 1905, p. 32; *China Med. Jl.*, 1919, p. 592.

(1019) *China Med. Miss. Jl.*, 1903, p. 128; *A Century of Prot. Miss.*, pp. 407, 409-10; *Customs Decenn. Rep.*, 3rd Issue, Vol. I, p. 337; *China Med. Jl.*, 1927, p. 392.

Siokhe. A woman physician sent out by the Reformed (Dutch) Church in America arrived at *Siokhe* in 1905 and the building of a hospital for women was commenced (1020).

Kirin. Dr. Greig, returning after the Boxer troubles to *Kirin* reopened in 1905 a hospital for men with 52 beds to which one for women with 25 beds was soon added by the Irish Presbyterian Mission. Dr. Greig's work enjoyed as before the hearty support of the Chinese.

A Government hospital, (官醫院) containing 24 beds for men, 20 for women and an isolation ward, was founded by Governor Ch'en Chao-ch'ang (陳昭常) at the end of 1908. Here treatment on modern lines was given under Dr. Chung Mo-sheng (鍾穆生) assisted by two other doctors, the only charges made being 15 cents per diem for food to in-patients. The establishment did excellent work during the 1910-11 plague epidemic (1021).

Lienchow. At *Lienchow* three Chinese dispensaries (for the local people, Hunanese and Cantonese respectively) were opened early in the decade now under discussion (1022).

Lao-ho-kow. Through the initiative of Bishop Landi a large Catholic Hospital was opened at *Lao-ho-kow* (老河口), Hupeh in 1910. Though before that time steps had been commenced to procure the services of a qualified medical man, it had at first to be entrusted to the Franciscan Sisters. In 1913 Dr. Mazzolani arrived to take charge. He left in 1914 but was succeeded by Dr. Giacomo Rastello under whose direction excellent work was done, especially in times of stress as that of the civil warfare in 1918. Then a Red Cross service was instituted in connection with the hospital (1023).

Engch'un. At *Engch'un* (永春), Fukien, where medical work was begun in 1893 by the Presbyterian Church of England Mission (1024), a large hospital for both sexes was opened in 1906 or 1907 under J. Preston Maxwell. Special features were wards for isolation and for accommodation of venereally diseased (1025).

Chenchow. An American Presbyterian hospital was opened at *Chenchow* in Hunan in February 1908, with Dr. Stephen C. Lewis in charge (1026).

Mengtsz. The Government of French Indo-China decided to create a hospital at *Mengtsz* which was actually opened on January 1, 1903, and had twelve wards with three beds for foreigners, a block

(1020) A Century of Prot. Miss., p. 376.

(1021) Customs Decenn. Rep., 3rd Issue, Vol. I, pp. 35-36.

(1022) Chesnut, China Med. Miss. Jl., 1900, p. 123.

(1023) Personal information from the Rev. Father Cherubino Checconi.

(1024) See Neal's table, Chapter X.

(1025) China Med. Miss. Jl., 1906, p. 143; China Med. Jl., 1908, p. 112.

(1026) Ibidem, p. 257.—The Century of Prot. Miss. stated (p. 541) that Dr. F. C. Krumling of the Evangelical Assoc. of North America was appointed for this station to reach the field in 1906.

with five wards for Chinese as well as accommodation for an out-patients' department, drug-store and physician's residence. The receipts from paying patients (mainly employees of the Yunnan Railway) as well as modest subventions from the Indo-China Government and the Railway Company made it possible to receive a number of poor Chinese patients free of charge(1027).

Luho. Work at *Luho* was resumed in 1900 by Drs. Geo. F. De Vol and French, at first in a Chinese building, afterwards in a proper hospital(1028).

Wuchow. The Wesleyan Mission at *Wuchow* opened in 1900 the first block of a hospital, called the Hart Ward and intended ultimately for the accommodation of foreign patients. A Chinese hospital for 40-50 beds followed soon. Sad to relate, Dr. Macdonald was killed by pirates in 1906.

A Baptist enterprise, called the *Stout Memorial Hospital*, was formally opened in 1904.

At about the same time, provision was made for the unfortunate, half-starved victims of leprosy: 18 small cottages, each for one leper, were erected on an island, some 10 miles above Wuchow, the entire expense being borne by the Mission to the Lepers in India and the East(1029).

Chuchow. Dr. Elliott I. Osgood resumed his work at *Chuchow* in 1901 in a small dispensary building to which gradually provisional accommodation for in-patients was added until in 1911 a proper establishment, the *Tisdale Memorial Hospital*, was opened(1030).

Sianfu. Regular medical activities of the English Baptists seem to have been resumed in 1904 with the arrival of Dr. H. Stanley Jenkins, followed in 1905 by Dr. Andrew Young and in 1909 by Dr. Cecil Robertson. In 1912 both Drs. Jenkins and Robertson succumbed to typhus but Dr. Young who was on furlough, returned to carry on the work(886).

As the Rev. Father Lunter informed us, a Catholic Hospital was opened at Sianfu in 1906.

Taichowfu. The Church Missionary Society, after having carried on dispensary work at *Taichowfu* for several years, opened an up-to-date hospital in 1905 with 50 beds under Dr. S. N. Babington(1031).

Further information in regard to already existing hospitals as well as some referring to new foundations will be considered only in

(1027) Barbezieux, Customs Med. Rep. No. 65 (1902-03), p. 25 & 66 (1903), p. 15.

(1028) A Century of Prot. Miss., p. 528.

(1029) Customs Med. Rep. No. 60 (1900), p. 31; Customs Decenn. Rep., 3rd Issue, Vol. II. p. 211; China Med. Jl., 1924, p. 424.

(1030) China Med. Jl., 1911, p. 413.

(1031) China Med. Miss. Jl., 1906, p. 49; A Century of Prot. Miss., p. 27.

the chronological table appended to this volume. Other new enterprises are now discussed.

Medical activities were commenced in 1900 by the Methodist Episcopal Mission in *Ngu-cheng* (Lungtien—龍田) (1032) and by Miss L. J. Doolittle of the American Presbyterian Church at *Siangtan* (湘潭), Hunan. Here, as well as at Chenchow (辰州), opened in 1904, hospitals were soon installed (1033). Dr. Sjoqvist, a member of the Swedish Evangelical Missionary Covenant of America, opened a hospital at *Siangyang* (襄陽), Hupeh, in 1901 (1034).

Weihuifu. When the missionaries of the Presbyterian Church in Canada returned to Honan in 1901, it was decided not to reopen Ch'uwang and Hsinchen but to establish instead stations at *Weihuifu* (衛輝) and *Huaich'ingfu* (懷慶). A hospital was opened in the former place in 1902, followed in 1905 by the Menzies Memorial Hospital at *Huaich'ingfu* (Hwaiching) (1035).

Yochow. Systematic medical activities at *Yochow* (岳州), Hunan, were started in May, 1901, in adapted Chinese premises by Dr. Ernest C. Peake of the London Missionary Society who, however, moved in 1902 to *Hengchowfu* (衡州府) in the same province to instal a dispensary and a hospital.

The Reformed Church in U. S. (German) resumed work at *Yochow* at the end of 1902 when Dr. J. Albert Beam arrived and opened a dispensary. A large hospital was afterwards built under Dr. F. W. Adams to which in due course a training school for nurses and hospital attendants was attached (1036).

Changsha. The medical pioneer at *Changsha* (長沙) in Hunan was Dr. F. A. Keller of the China Inland Mission who commenced activities in June, 1901 (1037).

In April of the following year (1902) a party of workers belonging to the Norwegian Missionary Society arrived in the city, comprising Mrs. J. A. O. Gotteberg, M.D., and Dr. J. E. Nilssen. Both immediately began to see patients, but Dr. Nilssen went in 1904 to *Iyang* (益陽).

(1032) Masters, *China Med. Jl.*, 1902, p. 1.

(1033) *A Century of Protest. Miss.*, p. 387.

(1034) *Ibid.*, p. 525.

(1035) *Ibidem*, p. 245; 1930 Directory of the Nat. Med. Assoc., Med. Inst., pp. 96, 101.—A new group of medical workers, arriving in Honan Province in November, 1903, under the auspices of the Seventh Day Adventist Mission consisted of Drs. A. C. and Bertha L. Selmon, H. W. and Maude T. Miller accompanied by Nurses Charlotte Simpson and Carrie Ericksen. They were stationed at Sintsaihshien (新蔡縣), Loshanhsien (羅山縣), Shangtsaihshien (上蔡縣), and Siangchenghsien (項城縣) (*A Century of Prot. Miss.*, p. 539). The *Encyclopaedia Sinica* (1917, p. 505) stated that their medical work was "still in its infancy."

(1036) *China Med. Miss. Jl.*, 1901, p. 303, 1902, p. 177; *A Century of Prot. Miss.*, p. 410; Customs Decenn. Reports, 3rd Issue, Vol. I, p. 337 & 4th Issue, Vol. I, p. 297.

(1037) *A Century of Prot. Miss.*, p. 146.

In 1905 two trained nurses came from Norway to assist at the two stations. Next year a proper hospital was opened at Iyang where Dr. Nilssen continued until 1909(1038).

A modest foundation for most important work was laid when in 1906 Dr. Edward H. Hume of the Yale Foreign Missionary Society (arrived in the summer of 1905) began medical work in quarters rented in the centre of Changsha. He was assisted by Mrs. C. Brownell Gage who was also a physician and had arrived in 1904. A hospital for 14 beds was opened in a rented Chinese house in March, 1908(1039).

Kaifengfu. A dispensary was opened in 1902 under Drs. G. W. Guinness and Carr of the China Inland Mission at *Kaifengfu* (開封府) in Honan, followed after a few years by a hospital. Dr. Guinness, assisted by other medical men and women, assiduously continued the work, (which included the education of students) until 1927 when he succumbed to typhus infection(1040).

Hwaiyuan. Dr. Samuel Cochran began in the spring of 1902 with hospital work in Chinese premises at *Hwaiyuan* (懷遠) Anhwei. Surgical operations, comprising numerous cases with stones in the bladder and urethra formed from the first a prominent feature of the work. A laudable part in this was taken by Mr. Chun, who excelled in eye operations. In 1910 an up-to-date hospital was opened where Dr. Cochran continued (performing distinguished research work in Kala-azar) until 1919, when—being transferred to the Tsinan-fu Medical School—he went to America to spend a year under Professor Zinsser(1041).

T'ungch'uan. The English Friends' Foreign Missionary Association, which had carried on a kind of dispensary at *Shekhunghsien* (射洪) in Szechwan Province for a few years before 1900, opened in 1902 a small hospital in a Chinese building at *T'ungch'uan* (潼川府) the capital of the same prefecture. Dr. W. Henry Davidson (see Chapter IX) was joined in 1905 by Dr. Henry T. Hodgkin. In the the same year a special hospital for women was opened and plans made for a new establishment for men(1042).

(1038) Dr. Nilssen returned after a furlough in 1911 to China and was once more in charge of the hospital at Changsha. Soon, however, he assumed general charge of the work of his mission. Leaving China in 1918 he died in 1922 (see *A Century of Prot. Miss.*, pp. 510-11; *China Med. Jl.*, 1923, p. 95, and *Directory of the Nat. Med. Assoc.*, *Med. Instit.*, p. 62).

(1039) *A Century of Prot. Miss.*, p. 549; *China Med. Jl.*, 1908, p. 183, 1916, p. 53.

(1040) *China Med. Miss. Jl.*, 1902, pp. 198, 215; *China Med. Jl.*, 1919, p. 478 & 1927, p. 499.

(1041) *China Med. Jl.*, 1907, p. 98, 1910, p. 374, 1925, p. 147.

(1042) *A Century of Prot. Miss.*, pp. 166, 170, 173.—Medical work in Szechwan was also started in 1903 by the Foreign Christian Missionary Society (see *ibidem*, p. 353 & *Encyclop. Sinica*, p. 187).

Hwanghsien. Dr. T. Ayers of the Southern Baptist Convention, came in 1902 to *Hwanghsien* (黃縣), Shantung, where he soon opened the Warren Memorial Hospital (1043).

Yungping and Wuting. In 1902, the English Methodist (New Connexion) Missionary Society transferred their medical work from Tangshan (唐山), Chihli, to *Yungping* (永平府) in the same province and in 1905 also started at *Wuting* (武定) city, Shantung, under Drs. A. F. Jones (arrived 1897) and A. K. Baxter (1903) (1044).

Dong-kau. Dr. Mabel Pantin of the Church of England Zenana Missionary Society came out to China in 1899 and after a short stay at Kut'ien settled in March 1902 at *Dong-kau* (唐口), Ping-nang district of Fukien Province, where she established a hospital for women. Dr. Pantin continued for many years until her health gave way. After a furlough she resumed work in Hunan but had again to return home, dying in 1926 (1045).

Yunnanfu. A French Consular Hospital was established in 1902 at *Yunnanfu* (雲南府). It was from 1912-16 under Dr. Vadon and then Dr. Vallet (1046).

Ts'angchow. In the year 1903 the Roberts Memorial Hospital was opened at *Ts'angchow* (滄州) near Tientsin under Dr. Arthur D. Peill of the London Missionary Society. He paid much attention to the training of pupils who, however, were taught to be medical assistants rather than qualified medical men. Some of these were stationed in branch dispensaries connected with the central hospital, Dr. Peill being a firm believer in the usefulness and importance of such auxiliary establishments (1047).

Chinwangtao. Provision for the hospitalisation of their employees was made in 1903 by the Chinese Engineering and Mining Company at *Chinwangtao*.

According to a convention concluded between China and Great Britain, the shipment of Chinese labourers for the Transvaal mines began in 1904. Taku proving unsatisfactory, Chinwangtao was soon chosen as the port of embarkation and a hospital built there for the use of the emigrants by the Transvaal Chamber of Mines. Drs. O'Neill and Wang Wen-ming were in charge. When the last of the emigrants returned in 1910, the establishment was taken over by the Engineering and Mining Co. and their former hospital closed. The

(1043) China Med. Miss. Jl., 1906, p. 47; A Century of Prot. Miss., pp. 327-328.—According to the 1930 Directory of the Nat. Med. Assoc. (Med. Instit., p. 102) this hospital was opened in 1901.

(1044) A Cent. of Prot. Miss., p. 109.

(1045) Ibidem, p. 57; China Med. Jl., 1926, p. 406.

(1046) Customs Dec. Rep., 4th Issue, Vol. II, p. 364.

(1047) China Med. Miss. Jl., 1904, p. 94, 1906, p. 45; Balme, l.c., pp. 79-80.

work was now in the hands of Dr. Andrew, the Port Medical Officer who was assisted by Dr. Fang Chien-chia. An average of 3,000 patients was treated per year(1048).

Tengyueh. Doctor Ram Lall Sircar, who was appointed Customs Medical Officer at *Tengyueh* (騰越) in January 1903, started a dispensary for the poor which gradually won the confidence of the population(1049).

Lanchow. In the year 1904 medical work on behalf of the Church Missionary Society was started by Dr. J. W. Hewett and Mr. A. Preedy at *Lanchow* (蘭州) the capital of Kansu Province(1050).

Juningfu. In 1904, the American Lutheran Mission sent a physician to *Juningfu* (汝甯府) in South Honan on the Peking-Hankow Railway. Regular dispensing was begun toward the end of that year. In the autumn of 1905 the sphere of this activity was shifted to *Choshanhhsien* (檀山縣) and the building of a hospital started(1051).

Sing-iu. The Margaret Eliza Nast Memorial Hospital at *Sing-iu* in Fukien was dedicated in November 1905. Destined for women and children it was under Dr. Emma J. Betow and Miss J. E. M. Lebens, a graduated pharmacist and nurse(1052).

Pochow. Dr. E. A. Layton of the Foreign Christian Missionary Society was located in 1905 at *Pochow* (亳州) in Anhwei Province but moved in 1906 to *South Tungchow* (南通州), near the north bank of the Yangtze, about 75 miles from the sea(1053).

Changli. The Martyrs Memorial Hospital at *Changli* (昌黎) near *Chinwangtao*—a Methodist Episcopal Mission establishment destined to replace that destroyed in 1900 at *Tsunhua*—was opened in autumn of 1905. It had departments for men as well as for women (and children) each headed by a foreign physician of the corresponding sex(1054).

Kingchowfu. The Chinese Government built in 1905 a hospital for the Franciscan order at *Kingchowfu* (荊州府), Hupeh, and in 1910 a medically trained Father arrived to take charge(1055).

Tsingtao. When the German Colony of *Kiaochow* was opened in 1898, Dr. Faber moved up to it in order to found a mission station but died in 1899 of dysentery. To perpetuate his memory a hospital with forty beds for the Chinese was built by the General Evangelic Protestant Missionary Society at *Tsingtao* (青島) in 1901 and called

(1048) Customs Decennial Rep., 3rd Issue, Vol. I, p. 188.

(1049) Wihal Chand, Customs Med. Rep., 68th-80th Issues, p. 59.

(1050) A Century of Prot. Miss., p. 139.

(1051) Ibidem, p. 534.

(1052) China Med. Miss. JI., 1906, p. 157.

(1053) A Century of Prot. Miss., pp. 350, 352.

(1054) Ibidem, p. 450; Customs Decenn. Rep., 3rd Issue, Vol. I, p. 187.

(1055) Ibidem, p. 294.

the Faber Hospital. It was in charge of a foreign nurse and regularly attended by the community surgeon (first Dr. Dipper, succeeded in 1904 by Dr. Wick). Branches were established at *Kaomi* (高密) (in charge of Dr. Li Ben-king who was specially skilled in eye operations) and at *Taitungchen*.

A Catholic hospital was also founded at Tsingtao and visited regularly by one of the foreign physicians. In addition to these two establishments providing for the needs of Chinese patients a community hospital for the foreigners, also named in honour of Faber, was opened in 1906(1056).

Yenping. In 1904 Dr. Skinner left the Wiley Memorial Hospital at Kut'ien (which was first in charge of Dr. W. B. Batcheller and in 1906 of Dr. Coole) and moved to *Yenping* (延平), Fukien, where he opened in 1906 the Alden Speare Memorial Hospital. The first regular report was published in 1919 when the work was in the hands of Drs. Skinner and Trimble. Three dispensaries under Chinese graduates were kept open in neighbouring cities where most useful work, including obstetrical practice, was done(1057).

Shek-lung. Father Conrady, a Catholic Missionary, began in 1906 to collect funds to build a home for lepers at Canton. In time the Chinese Government entrusted to him a leper asylum at *Shek-lung* which gradually sheltered over one thousand inmates. Father Conrady died in August 1914, but the work was continued by his assistants (1058).

Pingyangfu. A hospital of the China Inland Mission was erected in 1906 at *Pingyangfu* (平陽府), Shansi, named in honour of Dr. Millar Wilson, and put in charge of Dr. John Cecil Carr who continued to run it with success (until his death in 1922) assisted by Drs. King and Hoyte. A training school for nurses was organised in due course while Dr. Carr was instrumental in enabling some of the hospital assistants to study medicine at Hankow and Tsinanfu(1059).

Paoning. The Henrietta Bird Memorial Hospital of the China Inland Mission at *Paoning* (保寧), Szechwan, was opened in March 1907. At first housed in cramped Chinese quarters, the accommodation was steadily increased. In 1914 the main building of a new hospital was erected and during 1916 the hospital for women reconstructed; soon after a special building for septic surgical cases was added(1060).

(1056) *Ibidem*, p. 257; *A Century of Prot. Miss.*, p. 499.

(1057) *China Med. Miss. Jl.*, 1904, p. 162, 1906, p. 211; *A Century of Prot. Miss.*, p. 435; *China Med. Jl.*, 1920, p. 555, 1923, p. 592.

(1058) *Latourette*, *loc. cit.*, p. 561.

(1059) *China Med. Jl.*, 1923, p. 93.

(1060) *Ibidem*, 1917, p. 437.

Manchuria. Hospital work at *Antung* (安東) was instituted in 1907 by Dr. S. A. Ellerbek of the Danish Lutheran Mission (1061). In the same year a Government hospital (官醫院) was established at *Yenkifu* (延吉府), Kirin Province, and a Japanese Hospital, destined principally for the treatment of Koreans, at *Lungchingtsun* (龍井村) nearby (1062).

Other events of the year 1907 were the commencement of medical work in *Tayeh* (大冶), Hupeh, by Dr. W. A. Tatchell (1063), the opening of a hospital of the American Baptist Mission at *Hanyang* in the same province (1064) and the beginning of the activities of Dr. John Kirk (New Zealand Presbyterian Mission) at *Kongchuen* near Canton (1065).

Yungfuh. Dr. Whitney spent the last part of his distinguished career in China (since 1908) at *Yungfuh* (永福), Kwangsi. He retired in 1919 after 42 years of service and died in 1924 (1066).

Nanchang. Hospital work at *Nanchang* (南昌) in Kiangsi was started in 1908 by the Methodist Episcopal Church Mission who erected in 1919 a new up-to-date building (1067).

Wusih. Another foundation of the year 1908 was the St. Andrews Dispensary at *Wusih* (無錫), Kiangsu, under Dr. Claude M. Lee, which was soon enlarged to receive in-patients also (1068).

Pingyin. The St. Agatha's Hospital for women at *Pingyin* (平陰), Shantung, opened in May 1909, was under Drs. Frances Cunningham and Margaret Phillips of the Society for the Propagation of the Gospel (1069).

Kuling. A hospital for the foreign sojourners at the mountain retreat of *Kuling* (牯嶺) was established under Dr. Howard G. Barrie in 1909. In 1922 a new building was erected and the work, hitherto conducted as a private enterprise, was entrusted to a hospital committee, all qualified practitioners having the right to treat their own patients if so desired (1070).

(1061) A Century of Prot. Miss., p. 526; Customs Decenn. Rep., 3rd Issue, Vol. I, p. 106.

(1062) Ibidem, p. 85.

(1063) China Med. Jl., 1907, p. 235; Encyclop. Sinica, p. 599.

(1064) China Med., Jl., 1907, p. 123.

(1065) Ibidem, 1923, p. 256.

(1066) Ibidem, 1924, p. 1056.

(1067) Ibidem, 1925, p. 930.

(1068) Ibidem, 1908, p. 185, 1928, p. 411.

(1069) Ibidem, 1909, p. 407, 1911, p. 345.

(1070) Customs Decenn. Rep., 3rd Issue, Vol. I, p. 374; China Med. Jl., 1922, p. 89.

CHAPTER XII

PERIOD 1911—1920

OVERTHROW OF THE MANCHU DYNASTY AND THE FIRST MANCHURIAN PLAGUE EPIDEMIC. THEIR AFTERMATHS. BEGINNINGS OF MODERN PUBLIC HEALTH WORK UNDER CHINESE LEADERSHIP

Red Cross activities during the civil hostilities—Continuation of Red Cross work after the Revolution—1910-11 pneumonic plague epidemic in Manchuria—Foundation and history of the Manchurian Plague Prevention Service—Installation of a proper Public Health Service at Canton—Activities of the Central Government at Peking including the setting of a standard for the curriculum of medical schools, the legalising of dissections and culminating in the official recognition of Western Medicine—Foochow Health Department and Peiyang Quarantine Department—Isolation hospitals at Peking and Tsingtao—Regulations concerning the prevention of infectious diseases—Central Epidemic Prevention Bureau at Peking—Infectious Diseases hospitals at Shanghai—Continuation of Anti-opium campaign—Foundation of the National Medical Association—Activities of National Medical and China Medical Missionary Associations—Joint Council on Public Health Education—Kiangsu Public Health Association and Women's Social Service League at Changsha—Progress in the field of industrial medicine and moral welfare.

German medical school at Tsingtao—Medical College at Mukden—Foochow Union Medical College—Medical schools at Shanghai—Educational activities at Tzeiki—Canton medical schools—Hongkong University Medical School—Medical Special Colleges and other Government schools—Hunan-Yale College of Medicine at Changsha—Peking Union Medical College and activities of the Rockefeller Foundation—School of Medicine of Shantung Christian University—West China Union University Medical College (Chengtzu)—Hangchow medical school—Training of Nurses—Foundation and work of Medical Terminology Association—Chinese medical text-books and journals—Continuation of hospital activities and new foundations.

Never before in the course of our narrative have we had more reason for hailing the beginning of a new chapter in the history of Chinese medicine than now. For the two events ushering in the period now under contemplation—the Chinese Revolution and the great Manchurian Epidemic of Pneumonic Plague (1910-11)—led to immediate and profound changes.

The first of these was the mighty impetus given to *Red Cross* activities through the civil war. The *Shanghai* Red Cross Society, mainly on the initiative of Mr. Shen Tun-ho, sent a party led by Dr. S. M. Cox to the front. This detachment did much good work in the fighting round Hankow and Nanking (October 1911).

The local gentry were equally energetic. A few days after the outbreak of the Revolution (October 10, 1911) several leaders approached Drs. MacWillie and Paterson of *Wuchang* and asked for their assistance in forming a Red Cross Society. Later, the merchants of *Hankow* made a similar request to Dr. Booth. Eventually a local society was formed with Dr. MacWillie as President, Dr. Paterson and Professor Tsao as Vice-presidents of the *Wuchang* Branch, Dr. Booth and four Chinese gentlemen as Vice-presidents of the *Hankow* Branch. All the foreign doctors in the district offered their services and accommodation in their hospitals.

While an excellent foundation was thus laid for useful work, many obstacles were encountered at the start. The main difficulty was to ensure protection for the Red Cross establishments and the wounded under their care, which had been guaranteed under the Geneva Convention. As a matter of fact the purpose and scope of the work were unknown to most of the people in China. Since the meaning of the cross was not clear to them, the not very illuminating name of the Society in many places was—in literal translation of its Chinese title (赤十字會)—that of the “Red Ten Character Society” (the Cross being taken as the arithmetical sign for the Chinese numeral ten—十). On the other hand, for this same reason the emblem did not meet with any aversion as it did in Mohammedan countries, where a Red Crescent had to be adopted instead of the Cross. And not only had some genuine Red Cross organisations existed in China before the Revolution but the emblem had been used by certain benevolent societies, e.g., at *Wuchang*, which were evidently not fully aware of its significance. Thus it became possible after some initial difficulties to obtain approval and even generous support for the work from both sides.

Another Red Cross Society was founded through the united efforts of Chinese and foreigners at *Changsha* which cared for over 400 wounded from November, 1911—January, 1912.

In the North a society was organised under the auspices of the old government at *Peking* which was placed under Mr. Lu Hai-huan, a high official, with Drs. J. C. Ferguson as councillor and J. G. Gibb as Medical Organizer and Superintendent. All the senior groups of the Union Medical College were made up in Red Cross Units, about 40 students being sent out to the front under the guidance of Dr. Gibb and other doctors. They worked mainly at Hankow, Hsuehchow and Shih-Chia-Chuang.

At *Paotingfu* Dr. C. W. Lewis established a Base Hospital, while in *Manchuria* a branch of the Society was organised under Dr. D. Christie.

Full statistics as to these efforts are not available but it is certain that several thousand sick and wounded were well attended under Red Cross rules—stations undoubtedly existing in other places as well as the above-mentioned(1071).

During the hostilities, some confusion and overlapping resulted when detachments sent from the north on one hand, and those formed locally or coming from Shanghai on the other hand, met in the field. While these were as a rule amicably settled, differences of opinion sometimes existed between the Shanghai and Peking Societies even after both had come under the new Government. However, in September of the year 1912 an agreement was concluded by which the head office of the President was located at Peking and the Central Committee functioned at Shanghai. A Presidential Mandate issued in October, 1912, reappointed Lu Hai-huan as President of the Society. The Shanghai Conference elected in addition Shen Tun-ho as Vice-president and Chairman of the Central Committee, J. C. Ferguson as Councillor, Feng En-kun as Secretary, Kiang Tsu-fan as Director. In 1915 official regulations for the Red Cross were issued by the Ministries of Interior, War and Navy.

It is gratifying to note that not all of the Red Cross institutions were closed when the emergency was over. *The Shanghai Red Cross Hospital*, which had already existed before the Revolution continued to work on an enlarged scope. In October, 1911, an up-to-date plant was formally opened on grounds owned by the Society in Siccawei Road which was under Drs. Cox, Thue and Olesen(1072) assisted by Dr. B. Y. Wong as House-Surgeon. Instruction had been given to a class of students since the inception of the work about a year earlier; now twenty were in attendance. Mr. Shen Tun-ho stated at the open-

(1071) The Customs Decennial Reports (3rd Issue, Vol. II, p. 97) mention, e.g., that care was taken of people wounded during the Revolution at *Foochow* in the Chinese hospital under Dr. Moorhead. Laudable work was also done by the members of the English Baptist Mission in Shensi (Encyclop. Sinica, pp. 166-167).

(1072) Dr. Olesen died in December of 1911 while on Red Cross work in Hankow.

ing ceremony that the Society had, jointly with the Chinese Public Isolation Hospital, started a branch in Tientsin Road.

The Red Cross hospital at *Changsha* was converted into a Public City Hospital. According to Customs Commissioner C. E. S. Wakefield,

the success was so immediate and great that the staff needed strengthening after a month. It has received generous grants from the government and private individuals, and, to judge from the support accorded to it, will have a brilliant future before it if capable doctors can be found to join its staff.

At *Wuhu* the Red Cross Society opened in 1911-12 a dispensary on the new Maloo (Main Street) where the poor received attention from the doctors of the Wuhu General Hospital. In 1918 establishments were opened at *Ningpo* (紅十字會醫院) and at *Wanh sien* (萬縣—Szechwan) (1073).

The terrible *epidemic of pneumonic plague* which invaded Manchuria and North China in 1910-11, though it exacted a toll of 60,000 lives and caused monetary losses estimated at 100 million dollars, definitely laid the foundation for systematic public health work in China. Those in authority from the Emperor downwards, who had formerly pledged their faith to old-fashioned medicine, now acknowledged that its methods were powerless against such severe outbreaks. They were thus compelled to entrust the work to modern-trained physicians and to give their consent to drastic measures, such as compulsory house-to-house visitation, segregation of contacts in camps or wagons, and cremation of thousands of corpses which had accumulated at Harbin and elsewhere.

Incidentally, it may be recorded here that soon after his arrival at Harbin, Dr. Wu performed on December 28, 1910 *post-mortem* on the corpse of a female Japanese inn-keeper at Fuchiatien (native city) and established the presence of pneumonic plague lesions besides obtaining pure cultures of *B. pestis* therefrom.

For the first time in Chinese history, an International Medical Conference was called together at Mukden in April, 1911, under the chairmanship of Dr. Wu Lien-teh, the deliberations of which shed much light upon the almost unknown problem of pneumonic plague. It was attended by such well-known scientists as Richard Strong, S. Kitasato, D. Zabolotny, A. Stanley, Paul F. Haffkine, L. Padlevsky, G. Shibayama, A. Fujinami, Oscar Teague, C. Broquet, Reginald

(1073) *China Med. Journal* 1912, pp. 62, 85 (Edw. M. Merrins), 152 (Howard G. Barrie); 1913, p. 400 (F. C. Yen); 1926, p. 531 (J. G. Cormack); Chas. W. Young, *Journal of Race Development*, 1913, p. 57; *China Year Book*, 1913, p. 457; *Customs Decenn. Rep.*, 3rd Issue, Vol. I, pp. 321, 388; 4th Issue, Vol. I, p. 256, Vol. II, p. 110; information procured by Dr. C. S. Lin.

Farrar, Erich Martini, Gino Galeotti, O. Gonzalez-Fabela, S. T. Zlatogoroff, G. Koulecha, Dugald Christie, J. Chabaneix, etc.

Its deliberations were embodied in a fine "*Report of the International Plague Conference, 1911*," covering 500 pages and published by the Bureau of Printing, Manila.

The most gratifying result, however, was the establishment of the *North Manchurian Plague Prevention Service* as recommended by the Mukden Conference. The main resolutions passed by the Conference in regard to the creation of such a Service were as follows:—

13. The need for isolation of pneumonic plague patients being urgent, permanent isolation hospitals should be available. Such isolation hospitals should admit of individual isolation, be of rat-proof construction, and be capable of easy disinfection.
42. A permanent sanitary nucleus should be formed, capable of rapid expansion in time of plague, and a list should be drawn up of medical officers who could be sent immediately to the affected area on the outbreak of plague.
44. With the view of giving effect to these recommendations, every effort should be made to organize a central public health department, more especially with regard to the management and notification of future outbreaks of infectious diseases.

The establishment in October 1912 of the Manchurian Plague Prevention Service, with headquarters at Harbin, was a serious attempt made by the Chinese Government to give effect to the recommendations of the Mukden Conference mentioned above. Its inauguration was somewhat delayed by the Revolution, which had started in October of the previous year, but fortunately the Viceroy of Manchuria (Chao Erh-sun), the Inspector-General of Customs (Sir Francis Aglen), the Vice-Minister of Foreign Affairs (Dr. W. W. Yen), and the Commissioner of Customs (Mr. W. Haines Watson), all took a keen interest in the matter and did what they could to promote its success. For instance, the Viceroy appropriated from the Manchurian revenue Tls. 50,000 for the hospital at Harbin, Tls. 40,000 for Manchouli, Tls. 30,000 for Tsitsihar, and Tls. 20,000 for Lahasusu.

Sir Francis Aglen induced the Diplomatic Body of Peking, which at first vetoed the scheme, to change their minds and to agree to the withdrawal of Tls. 60,000 annually from the Chinese Maritime Customs for the maintenance of the Service; Dr. W. W. Yen showed his sympathy by drawing up some of the regulations and placing the Plague Prevention Service under the *aegis* of the Waichiaopu (Foreign Office); lastly Mr. W. Haines Watson (Commissioner of Customs, Harbin, died 1914), who was present throughout the great plague of 1910-11 and therefore fully understood the urgent need of

preventive measures, gave invaluable advice in the organization of the several hospitals at the beginning of their existence.

A large piece of land (120 mow) lying between the Railway Area and native city in Harbin was presented by the Governor of Kirin. The Harbin Plague Prevention Service Hospital, construction of which began in September 1911, was completed in summer 1912. The original plant, erected at a cost of \$70,000 and opened in December 1912, consisted of two separate compounds, the west containing buildings devoted to administration and the treatment of general patients as well as the quarantining of four hundred persons; the east compound containing isolation blocks for the accommodation of thirty suspects and forty plague cases. A modern administration block, which temporarily housed also the laboratory and the operating theatre was opened in 1919. In 1922 another new block was added for the accommodation and treatment of general patients, followed in 1924 by an up-to-date building to house the laboratory, library and museum. In 1926 a model pneumonic plague ward was erected in the East compound permitting of the accurate observation and treatment of patients with a maximum of safety to the staff.

In the same year as the original Harbin hospital (1912) an isolation hospital was opened at Lahasusu (同江) at the junction of the Sungari and Amur Rivers, followed in 1913 by a similar establishment at Sansing (三姓) on the Sungari River, and in 1914 by a larger plant at Taheiho (大黑河) on the Amur River opposite Blagovestchensk.

The scope of the work was increased when in 1918 a special appropriation was sanctioned for the establishment of a Quarantine Hospital at Newchwang. Building operations were commenced in 1919 and the hospital was formally opened on July 10, 1920. There is a large front block one hundred and sixty-two feet wide, containing operation and diagnostic rooms and general wards; next is a disinfection block; and behind lies the contagious block, with individual rooms and verandas facing the south. The cost of these original buildings was Tls. 40,000, accommodating forty-five beds. In 1923-24, a series of six detention blocks, built of brick and having cement floors, were added to the hospital. Each possesses a set of hygienic *k'angs* (sleeping platforms), insect-proof and dirt-proof, to serve as beds for those detained under observation. There is accommodation for eighty persons in each block; hence, a minimum of four-hundred persons may be detained at any one time. The cost of this second lot of buildings was \$40,000. In the year 1927 \$9,000 were spent to add a new block for medical examination of passengers.

North Manchuria being up to the year 1919 free from major epidemics, the energy of the Service was devoted during the first

years of its existence to general medical work as well as to an investigation of plague problems in Manchuria and Transbaikalia. The results were embodied in the biennial Reports of the Service, the first of which appeared in 1914.

In 1919, when cholera invaded Harbin, the Plague Prevention Hospital concentrated its energy upon the fighting of this epidemic with most gratifying results. Out of 1,962 patients admitted, only 275 (i.e. 14.11%) died, though many came in a practically moribund condition. In 1920-21 the Service was confronted with the task of fighting the second Manchurian pneumonic plague epidemic, this disease having once more entered China from its haunts in Eastern Transbaikalia into the adjacent Manchurian territory. Though, for reasons beyond the control of the medical staff the promising endeavours to localise the outbreak in Hailar were frustrated, and the disease once more reached Harbin, the radical measures taken succeeded in limiting the total number of victims (including Siberia) to 9,300 and in practically staying the spread of the epidemic south of Harbin, which city had played an ominous role in the 1910-11 outbreak.

During the 1920-21 epidemic an exhaustive study of pneumonic plague was made. After this, researches upon the tarabagans (Siberian marmots), suspected to be the reservoir of the disease, were continued with redoubled vigour and led to encouraging results. Joint work of the Plague Prevention Service staff with the Russian Anti-Plague Detachment in Transbaikalia definitely established in 1923 the existence of plague epizootics among the marmots, while independent investigations of the Chinese scientists at Manchouli succeeded in demonstrating experimentally the role of the tarabagan flea in the transmission of the disease (1924). These results as well as an exhaustive compilation of the literature to date were embodied in a voluminous "Treatise on Pneumonic Plague" by Wu Lien-teh, published by the League of Nations Health Section in 1926.

While the focus of tarabagan plague to the west of North Manchuria appears lately to have become quiescent, a new responsibility was added to the tasks of the Plague Prevention Service by perennial outbreaks of *bubonic plague* in the Tungliao and adjacent districts of South Manchuria. A comprehensive study of the situation there was made by members of the staff in 1928. The main burden of dealing with the 1929 and 1930 outbreaks in rural communities among a backward population also fell upon the Service. Plague reappeared in 1931, but our field work was cut short by the Japanese invasion of Manchuria. Fortunately the outbreak was limited.

Activities at the various stations were continued though much hampered and at times actually endangered by the hostilities. The

1932 cholera outbreak found the Service well prepared. As on previous occasions, the presence of the disease at Harbin was first diagnosed in our laboratory and ample use was made of our vaccine. The Municipal (former Russian) Hospital having no experienced bacteriologist on its staff, our experts had to supervise the laboratory work there in addition to carrying out our own.

In spite of these manifold and essential activities the newly established Customs authorities at first refused to continue the modest appropriation which had been regularly received for twenty years, though they afterwards paid out a much smaller sum. The name of the Director, who had been faithfully carrying out the work since its inception was arbitrarily struck off the list. The activities of the Service, which had hitherto built up an international reputation among scientific circles with its up-to-date research institute and unique plague museum, were practically strangled, only simple routine hospital work being continued by a junior officer in charge. Fortunately such an *impasse* had been anticipated ever since the commencement of the Japanese invasion on September 18, 1931, and arrangements had been made to carry on the work in Shanghai under new conditions but with unimpaired *morale* (1074).

The pace set by these developments was kept up during the decade under review, leading to the inauguration of many genuinely Chinese medical and public health activities.

It was but natural that the progressive people of *Canton* were among the first to become imbued with the new spirit and soon put their ideas into practice. In 1912 Dr. Li Shu-fan (李樹芬), a graduate of Edinburgh University, was appointed Health Commissioner of Kwangtung Province, assisted by five foreign-trained Chinese physicians. A Report issued in 1913 shows that the work commenced by Dr. Li Shu-fan was continued by his successor Dr. Ho, and comprised the following:—

(a) *Notification of eight infectious diseases*

(viz., plague, cholera, smallpox, leprosy, typhoid fever, diphtheria, puerperal septicemia and hydrophobia) was made compulsory for all registered practitioners.

In connection with this measure an *Isolation Hospital* was contemplated in 1912 opposite the Macao Fort Island with accommodation for 100 patients.

(b) *Disinfection and cleaning of infected premises*

was enforced by stationing in various quarters of the city disinfecting gangs, each under a foreman and controlled by a sanitary inspector. In addition the latter reported to the Health Bureau any premises found in a

(1074) Report of International Plague Conference, held at Mukden in April, 1911; Reports of the Manchurian Plague Prevention Service Vols. I-VII, *passim*; Wu Lien-teh, *Nat. Med. Jl.*, 1924, p. 265; Plague Number of the *Nat. Med. Jl.*, June 1929; Memorial Volume of the Manchurian Plague Prevention Service, Shanghai, 1934, p.5.

filthy condition. In such cases a notice was served upon the occupant to have them cleaned within a stated time. If he failed to do so the work was performed by the disinfecting gang which also cleaned once weekly the markets within its district.

(c) *Collection and examination of dead rats.*

For this purpose 2,000 boxes for depositing dead rats were distributed over the city and a gang of collectors employed to fetch the carcasses twice daily and to change once every day the disinfecting fluid placed in the boxes. The collected rodents (daily average 1,400) were conveyed to the Bacteriological department for examination after having been properly tagged.

(No prices were offered for rats as in the past, because this policy had led to malpractices).

(d) *Plague Prevention.*

Whenever plague-infected rats were reported by the laboratory, the district in question was cleansed and bird-lime distributed free for the catching of rats. Pamphlets on the nature and prevention of the disease were broadcast and the public also addressed through meetings and newspapers. Prophylactic inoculation was offered free of charge.

(e) *Smallpox prevention.*

Free vaccination was offered in spring, the vaccine being prepared in the Bacteriological Department.

(f) *Freeing the city from lepers.*

All cases found were sent to the leper colony, if necessary after bacteriological confirmation.

(g) *Registration of Deaths.*

If the deceased had been treated by a registered medical practitioner, the certificate of the latter was accepted. Failing such the undertakers were obliged to report as soon as the coffin was sent for and a police or sanitary inspector was dispatched who filled out a form issued by the Health Bureau with reference to the nature and duration of the disease, etc. Should there be any suspicion a medical officer was sent for further examination. If necessary the body was sent to the mortuary for *post mortem* diagnosis (1075).

A *Municipal Health Department* was organised in Canton under Dr. S. M. Woo towards the end of this decade. Its activities will be considered in the following chapter.

Soon after the Canton authorities had taken the lead, the *Central Government in Peking* began to create new rules which were of great importance for the medical life of China. The first of these was the setting of a *standard for the curriculum of medical schools* in China in the year 1912 (followed in 1916 by *regulations for medical and pharmaceutical examinations*) (1076).

As a result of Dr. Wu Lien-teh's visit to England and America to attend (a) International Congress of Medicine, London, August 1913, and (b) International Congress of School Hygiene at Buffalo, August 1913, he submitted a long memorandum on "Medical Education in China" to the Central Government, Peking, suggesting radical im-

(1075) Li Shu-fan, *China Med. Jl.*, 1913, p. 226.—See also Thomson, *ibidem*, 1912, p. 208.

(1076) Meleney, *ibidem*, 1926, p. 1195 and information procured by Dr. C. S. Lin.

provements in that domain, including the need of human dissection, systematic clinical teaching in hospitals, a Central Medical Council and knowledge of English for students. This was perhaps the first document of its kind in the new era.

In November, 1913, a Presidential Mandate was issued legalising and regulating *dissection of dead bodies* and on the 22nd of the same month detailed regulations were promulgated as follows:—

Order of the Board of Interior No. 51.

- I. A physician, in case of death from disease, may dissect the body and inspect the diseased part to determine (examine) the origin of the disease, but he must first obtain the consent of the relatives of the dead person and clearly inform the local magistrate before proceeding to dissection.
- II. The police and inspectors, in case of mysterious death, the cause and origin of which cannot be accurately ascertained without dissection, may appoint a physician to dissect said corpse.
- III. The bodies of all those meeting death by punishment or dying in prison from disease, without relatives or friends to claim their bodies, may be given by the local magistrate to a physician for dissection, to be used for the purpose of experimentation in medical science, but after dissection the body must be sewed up and buried.
- IV. If any are willing for the benefit of science to offer their bodies for dissection and leave word to that effect before death, they may do so, but the whole body must be sewed up and returned to his or her family after dissection.

The above regulations were supplemented in April, 1914, by an additional order of the Board of Interior (No. 85). Its principal articles were:

- No. I, giving the right to perform dissections to all medical colleges and hospitals, which were proved to be in good condition by the local authorities and recognised beforehand by the Board of Education or established by the public;
- No. V, conferring under certain restrictions the right to retain parts of a dead body if such were necessary for medical demonstrations;
- No. VII, according to which dissected bodies of persons having no family could be cremated, the ashes to be collected and properly buried.

As soon as a copy of the 1913 regulations was given to the Peking Union Medical College, Dr. J. G. Cormack, its principal, sent a petition to the Board of Interior, asking for a body from the prisons. This request was complied with within ten days, and Dr. Wheeler performed dissection "in a little side room of what was then the laundry of the College Hospital, now the Wenham Hall". As stated in the Report of the Medical Commission sent by the Rockefeller Commission to China, two more corpses soon followed and—no arrangements having been made for the preservation of such—further offers by the prison authorities had to be refused. Practical anatomical work was also started in 1913 in the Chinese Peking Medical College, the newly

appointed Director of which, Dr. Tang Er-ho (湯爾和) had been instrumental in obtaining the Government sanction for dissections.

A little earlier than at Peking, autopsies had already been performed in other places with the express or at last the tacit consent of the authorities. Thus numerous dissections were made at Harbin, Mukden and other cities of *Manchuria* at the time of the 1910-11 pneumonic plague epidemic. Further, as we have seen, *post mortems* had been approved under the new regime adopted at *Canton* in 1912.

On November 13, 1913, i.e. a short time before the rules of the Board of Interior were made public, the dissection of the body of a criminal was performed at the Kiangsu Provincial Medical School in *Soochow* with permission of the Governor. The occasion was one of great formality: Some sixty-five persons were invited to attend and those present included the representative of the Governor, judges, many other officials and Chinese as well as foreign medical men. The day was considered so memorable, that the guests and the subject were photographed and a descriptive pamphlet was published in which it was stated that this was the first dissection in China for four thousand years!

The students of the *Chengtzu* medical school practised anatomy work early in 1915. Even in this inland centre, no difficulties or resentment were met with.

The first official autopsy at *Changsha* was performed on August 20, 1915, on the body of a man who had died a few hours after he had been picked up on the street. When permission for dissection was obtained and the necessary preparations made, it was ascertained that the body had already been interred. Thereupon, it was exhumed and an autopsy made. The deputy from the Health Department present gave a short speech explaining the importance of determining the cause of death in such cases and was followed by Dr. F. C. Yen with a statement of the need for such work in the interests of medical education.

The *Tsinanfu* School of Medicine could only undertake dissections in the school year 1917-18, and even then bodies had to be procured at first from Shanghai. Afterwards, however, sufficient material was procured on the spot.

Before the twentieth century saw the dawn of a new era, autopsies were of the utmost rarity in China. A few instances have been mentioned in previous chapters, and it may now be related that Dr. J. F. Wales, Customs Medical Officer at Canton, performed in 1883 or 1884 an autopsy on the cadaver of a Chinese, aet. 33, who had been treated for bladder stone in the missionary hospital. A solitary attempt to use the body of a man found dead at Shanghai was made in 1893 but

gave rise to manifold rumours. The situation was aptly summed up by the Rockefeller Commission of 1914:—

Up to the present time the number of dissections and autopsies that have been done in China is practically negligible. One hears very rarely of a foreign doctor who has performed an autopsy, or more likely a partial autopsy. These have always been done with the utmost secrecy, for if news of them got abroad, the public might become inflamed, and the doctor and his hospital be in grave danger. At one government school we were told that dissections had been carried on—that moribund patients were brought to the hospital from the jail, and that after death their bodies were dissected. Outside inquiry revealed the fact that this has happened, but it is doubtful if it has happened frequently. At another school it was said that bodies had been dissected, but the number is very questionable. At Shanghai a limited number of bodies have been obtained for dissection at the Harvard Medical School, and about six autopsies have been performed in the school (1077). Conditions are of course very favourable in Shanghai, where there is a large foreign Concession, and a foreign health officer.

In Hongkong, in British territory, the situation is quite different. The medical school can obtain all the material it needs for dissection, and about two thousand autopsies are performed annually by order of the health authorities. Some students of the Kwong Hua Medical School in Canton come to Hongkong in the summer for a special course in anatomy.

In June, 1933, modified rules for dissection and autopsy were promulgated. Most important was that post mortems could be performed six hours after a report had been filed with the local authorities provided that no order to the contrary had been received (1078).

It was but natural that the old-style practitioners viewed with alarm the favourable attitude taken by the Government towards Western medicine. To stem the tide they organised in 1914 a propaganda committee and elected representatives to interview the President and the Minister of Education. However, the time when their influence prevailed had passed. In fact, the Presidential Mandate on Requirements of Officials, issued on September 30, 1915, made no reference to the old-style methods for medical practice but demanded for candidates in Medicine, Pharmacy and Veterinary Science the standards insisted upon by all progressive countries, thus giving *official recognition to Western Medicine* (1079).

(1077) Latourette (l.c., p. 655) claims that "the first dissection of the human body in China for purposes of medical instruction seems to have been made in the Harvard Medical School in the International Settlement in Shanghai in 1911 or 1912, a year or more before the practice was officially permitted by the government."

(1078) Customs Med. Rep. No. 27 (1883-84), p. 7; China Med. Miss. Jl., 1893, p. 116; Editorial, China Med. Jl., 1914, p. 207; Cormack, *ibidem*, pp. 237-238, 1915, p. 346; Cormack, 1926, p. 533; National Med. Jl., 1915, No. 1, pp. 38-40, 42; Report of the Rockefeller Commission, pp. 86-88; 1918 Report of the School of Med., Shantung Christian University, p. 11; Cowdry, *Anatomical Record*, Vol. 20, No. 1, p. 33 & foll.; 1930 Directory of the Nat. Med. Assoc., Peiping, p. 13; Chin. Med. Jl., 1933, p. 849.

(1079) National Med. Jl., 1916, No. 2, p. 1.

We have seen how in the past endeavours had been made by local and provincial Chinese authorities to combat infectious diseases and provide for quarantine. Further progress in this field, in which the Central Government soon took a share, will now be reviewed.

In July, 1911, the Taotai of Police inaugurated a Health Department at *Foochow*, with the idea of instructing the populace in the elementary rules of sanitation. A proclamation was issued prohibiting the practice of throwing refuse and offal on the streets and the lengthy exposure of corpses, as being conducive to disease. An official dispensary, under care of a graduate from the Peking Union Medical College, was started in the same year for the gratuitous treatment of persons suffering from infectious diseases (1080).

The Peiyang Quarantine Department (北洋防疫處), which was in charge of the sanitary matters not only of Tientsin but of the eastern part of Chihli Province, took steps to erect a quarantine hospital at *Chinwangtao*. A site on the northern part of the Bluff had been handed over for the purpose by the French authorities in 1910 but proved unsuitable owing to its proximity to the foreign residences. A piece of Chinese Government land, a short distance west of the foreign barracks, was offered in exchange, and here a well-equipped hospital was built in 1913 which was put in charge of Dr. C. F. Lau (劉湛科) a graduate of the Peiyang Medical College. While infectious cases were admitted, a free dispensary was also established for the public (1081).

An event of much importance was the opening in the year 1915 of an Isolation Hospital at *Peking*. Up to then the capital had been rather backward in matters sanitary, and cases of infectious disease like small-pox, scarlet fever and diphtheria were allowed to pass unnoticed. Mr. Chu Chi-chien, the then Minister of Interior, saw the necessity for an isolation hospital and obtained the approval of President Yuan Shih-k'ai for the erection of such an establishment with sixty beds on Tenth Street, North City. It at once became so popular that six months after its opening the community was already demanding more room in order to accommodate the increased number of cases (1082).

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- (1080) Customs Decenn. Rep., 3rd Issue, Vol. II, pp. 97-98.—A city-wide campaign to prevent the recurrence of cholera was conducted at Foochow under the auspices of the Council on Health Education in 1920 (Gossard, *China Med. Jl.*, 1920, p. 667).
- (1081) Customs Decenn. Rep., 4th Issue, Vol. I, pp. 132, 167.—A Japanese Hospital (佐藤醫院) was built at Chinwangtao in 1914 under the patronage of the firm Shoko Yoko. It was readily patronised by the Chinese, particularly opium addicts.
- (1082) *National Med. Jl.*, 1915, No. 1, p. 41; 1930 *Directory of the Nat. Med. Assoc.*, Peiping, p. 26.

Another event of the year 1915 was the opening of an isolation hospital at Taisichen, *Tsingtao*, which was then in the hands of the Japanese; this possessed 100 beds(1083).

On March 12, 1916, the Ministry of Interior promulgated *regulations concerning the prevention of infectious diseases*(1084). Further progress was made when in 1917 pneumonic plague again appeared in North China, this time in Shansi Province. Fortunately the region traversed by the epidemic during the winter 1917-18 was sparsely populated and sufficient medical assistance was rendered in time so that only 16,000 persons fell victims to the scourge during its seven months' sway. Moreover the epidemic enabled the Government to utilise the balance of a one million dollar loan, obtained from the Group Banks to combat the disease, for the establishment in 1919 of the *Central Epidemic Prevention Bureau* at Peking, for which an annual appropriation of \$110,000 was secured from the Maritime Customs. The institute, situated in the historic and beautiful grounds of the Temple of Heaven, comprises departments for bacteriological and serological work, vaccine and antitoxin preparation and research and is provided with up-to-date stables and excellent equipment. In 1929 the Bureau was made a permanent organisation under the Ministry of Health. The Director, nominated by the Ministry, was assisted by a Board consisting of six members and had a staff of six experts and 45 assistants, all technical members having received special training in America, Europe or Japan. The products of the Institute, most of whose activities under Dr. Edgar Tsen have been recently transferred to Nanking, are highly appreciated for their excellent quality and reasonable price(1085).

In 1919 steps were also taken at *Hangchow* to prevent the ingress of epidemics. Infectious cases were notifiable to the Police and three institutions were erected for isolation(1086).

The Directors of the Chinese Cholera Hospital at *Shanghai*, noting that the people preferred to come to an institution run by Chinese, decided to offer ampler and better accommodation. Not being unanimous over the scheme, the Board split up into two parties in 1920, each founding its own establishment. One was the Chinese Infectious

(1083) Customs Decenn. Rep., 4th Issue, Vol. I, p. 227.

(1084) National Med. Jl., 1916, No. 2, pp. 2, 34 (text).—About one year earlier (April 14, 1915) a Presidential Mandate on Sanitation was issued which exhorted local magistrates to report on the work which had been achieved (Nat. Med. Jl., 1915, No. 1, p. 37).

(1085) Wu Lien-teh, China Christian Year Book 1926, p. 357; 1930 Directory of the Nat. Med. Assoc., Peiping, p. 10.

(1086) Customs Decenn. Rep., 4th Issue, Vol. II, p. 97.—The Isolation Hospital founded by Dr. Main between 1900—10 was transferred during the decade now under discussion to a new site on Song-moh-dzang and enlarged to accommodate 25 patients (Kingston de Gruche, l.c., p. 159).

Diseases Hospital, situated on Tibet Road adjoining the French Concession and put under Dr. Stafford Cox; the other, a Summer Diseases Hospital located on Tientsin Road, was run by the Chinese Red Cross Society (1087).

Reverting to the measures taken against the *opium evil* discussed in the preceding chapter, we find that China made such rapid progress in its program that by 1913, the Indian Government agreed to put an entire end to the sale of opium for the China market. In addition, the Ministry of Interior promulgated on October 15, 1915, regulations governing drug merchants and another set restricting the use of opium, morphine, etc. to purely medicinal purposes. This was followed on November 19, 1916, by a new Presidential mandate exhorting perseverance in the struggle.

The combine of Jewish merchants, who had been the principal promoters of the trade, began to rush opium into the country and accumulated a huge stock at Shanghai. Eventually, a bargain was struck with some unscrupulous officials, and about 1,500 chests of opium were purchased on behalf of the Central Government at the price of Tls. 6,200 per chest. When the news leaked out, the people all over the country raised an outcry, especially as the excuse for buying the opium was that it was destined for the manufacture of medicine! When Mr. Hsu Shih-chang was elected President, he issued a Mandate on December 4, 1918, ordering the burning of the remaining chests (1,207) as a proof of China's earnestness in suppressing the opium evil. Mr. Chang I Ping, Vice-Minister of Justice, was appointed the President's delegate to superintend the operations, the Board of Foreign Affairs appointed Mr. Ivan Chen (Commissioner of Foreign Affairs, Shanghai) and Dr. Wu Lien-teh, the Boards of Finance and of Interior, Messrs. Wang Chia-chen and Shao Fu-yin respectively. The chests, worth about 24 million dollars, were publicly examined and burned during January 8 and 27, 1919. Simultaneously, *International Anti-opium Associations* were formed in Shanghai, Peking, and Tientsin, to continue the efforts for suppressing the evil. In September of the same year, *Morphine Regulations* were passed by the Parliament in Peking and simultaneously with another Presidential Mandate on Opium Suppression, *High Commissioners* were appointed in each province to supervise the task (1088).

A permanent landmark in the annals of Chinese medicine was the foundation of the *National Medical Association*. Its history dates back as far as 1910 when Dr. Wu Lien-teh had the plans thought out

(1087) China Med. Jl. 1920, p. 465 and personal information from Mr. W. T. Chow, procured through Dr. Sung.

(1088) Nat. Med. Jl., 1916, No. 4, p. 28, 1918, p. 177, Wu Lien-teh, 1919, p. 4, ibidem, pp. 228, 229; Latourette, l.c., p. 660.

and put on paper but received insufficient support. In 1913 a Chinese Medical Association was established at *Peking* and its members took an active part in the proceedings of the Missionary Medical Conference, then in session.

In May, 1914, the idea of forming a National Medical Association was again urged. As a first step a careful survey of all qualified Chinese practitioners was made. A fine opportunity for further progress offered itself when the doctors met again at *Shanghai* on the occasion of the 1915 biennial conference of the China Medical Missionary Association. A dinner was arranged on February 5 of that year at which the following were present:

Drs. Yen Fu-ching, E. S. Tyau, C. V. Yui, Hsu Shih-fang, U. K. Koo, Ting Foh-pao, H. C. Chen, E. Y. Kau, T. K. M. Siao, N. A. Tang, Ida Kahn, Z. D. Dzung, Y. W. Lee, C. S. Lau, K. T. Liang, W. P. Chung, A. M. Wong, Mary Stone, Dau Se Zak, Tsao Li-yuen and Wu Lien-teh.

After the dinner, Dr. F. C. Yen was voted to the chair and explained that several years ago an attempt was made to form such an association but failed owing to lack of interest. He emphasized the necessity of united efforts and co-operation in this renewed endeavour.

Dr. Siao gave his experience of the organisation founded by the students returned from Japan. Then Dr. Wu Lien-teh spoke on medical ethics and the importance of making the medical profession respected by government and public alike, and finally proposed the formation of a National Medical Association of China. This motion was seconded by Dr. Siao and unanimously carried. The following officers were elected:

President	F. C. Yen (1089);
Secretary	Wu Lien-teh;
Treasurer	E. S. Tyau;
Elected members	T. K. M. Siao;
	Tsao Li-yuen;
Business Manager	C. Voonping Yui.

It was decided that the next Conference be held within the first week after Chinese New Year (old style) and the committee was empowered to draft a constitution.

This, as published in October, 1915(1090), contained the following important provisions:—

I. The name of the association was the National Medical Association of China (中華醫學會)

(1089) Subsequent Presidents were:—Wu Lien-teh (伍連德), 1916-20; Yui Voonping (俞鳳賓), 1920-22; Tyau Sing-teh (E. S. Tyau—刁信德), 1922-24; New Way-ling (牛惠霖), 1924-26; Liu Jui-heng (劉瑞恆), 1926-28; Lim Kho-seng (R. K. S. Lim—林可勝), 1928-30, New Way-sung (牛惠生), 1930-32.

(1090) National Medical Journal, Vol. I, No. 1, from which the bulk of above information has been gathered.

II. Its objects were:

1. To promote good will and union among Chinese practitioners of Western Medicine.
2. To maintain the honour and the interests of the medical profession.
3. To expedite the spread of modern medical science in China and to arouse interest in Public Health and preventive medicine among the people.
4. To co-ordinate and co-operate with the existing medical forces in China, Chinese and foreign, in the working out of the above objects.

III. Three classes of members were provided for:

1. *Regular members* being (a) graduates in medicine of recognised foreign universities or colleges; (b) graduates of medical colleges in China recognised by the Association who have a good reading and writing knowledge of at least one western language.
2. *Associate members*, being graduates from recognised medical colleges in China who possess no knowledge of a western language. These were to enjoy the same privileges as the regular members except eligibility as officers. They could become regular members if recommended by two regular members and after the approval of the committee.
3. *Honorary members* to include distinguished individuals and members of the profession of all nationalities who had rendered some signal service to China.

VI. A Journal was to be published regularly in English and Chinese, called *The National Medical Journal of China* (中國醫學雜誌) and to be issued at first every six months.

VII. A local branch could be formed by any three members, provided that its constitution was in full harmony with the Constitution and By-Laws of the Central Association.

The first number of the *National Medical Journal of China* (English and Chinese editions) appeared in October, 1915. It contained, besides a leading article by E. S. Tyau dealing with "The Demand of Modern Medicine upon the Profession, the College and the Government" and a few others treating on public health and clinical subjects, news about the young Association, etc. It was stated among other things that a membership campaign, launched after the initial meeting, had resulted in the enrolment of 232 doctors.

The next number of the journal came out in March, 1916 and from then onwards up to 1923 it appeared in quarterly instalments; since 1924, it has appeared bi-monthly.

The first *Conference* of the National Medical Association was held in Shanghai at the Y.M.C.A. buildings on February 7-12, 1916, about 80 members from different parts of China being present. The *pre-sidential address* was delivered by Dr. F. C. Yen (Changsha):

After welcoming those present and expressing thanks to the Shanghai members for their great exertions to make the meeting a success, Dr. Yen outlined its program.

The first matter to be solved was that of *membership*. While too low a standard was to be avoided, the scope of the association might be enlarged in two directions: (a) By inviting foreign doctors as members; (b) By seeking for members among the Chinese doctors who had graduated from Japan. These had formed an association of their own but negotiations had been started to bring the two groups together.

The necessity for a central office either in Shanghai or Peking was stressed and it was recommended that a full-time man be engaged to look after the routine work under direction of the Executive Committee. Emphasis was also laid upon the formation of as many branches as possible as a means to bring the members in close touch with one another and indirectly with the central association.

In regard to the journal Dr. Yen recommended paying as much attention as possible to its Chinese part, which should be separated from the English one and appear at least bi-monthly. It should contain not only matters of interest for the doctors trained in Chinese but also helpful suggestions regarding health matters for the general public. A Chinese journal was published at Canton under the auspices of the China Medical Missionary Association but this body would consider favourably proposals to relieve them of this burden.

The field being so vast it would be necessary to concentrate efforts on a few undertakings which could best be done by Chinese than to make meagre attempts on all medical enterprises, duplicating in some respects the work carried on by the foreign practitioners. They should consider (a) the spread of medical knowledge among the people; (b) the translating of medical books. As practical suggestions in this direction, he mentioned paying attention to the unification and standardization of Chinese medical terms by appointing a committee, seeking co-operation with the joint Council on Public Health formed in 1915 by the China Medical Missionary Association and Y.M.C.A. and encouraging the formation of public health organisations in the various communities.

The address concluded with an appeal to the members to uphold the honour and dignity of the profession, especially in view of the unique opportunity present.

Public lectures held in connection with the Conference were as follows:—

Dr. F. C. Yen	Duties of the Medical Profession;
Dr. Wu Lien-teh	How to lead a Healthy Life;
Dr. Arthur Stanley	Quack Medicine;
Mr. Roger S. Greene	A Layman's Impression of Modern Medicine;
Dr. W. W. Peter	Health as Factor in National Strength.

Sessions and discussions were held on five important subjects:

<i>Preventive Medicine:</i>	Papers by Dr. Wu Lien-teh (Harbin) on "Foundations of Modern Hygiene in China"; Ida Kalm (Nanchang) on "Home Hygiene"; Dr. H. J. Shu (Hankow) on "Some Attempts at Sanitary Reform in Hankow since the Revolution of 1911" (1091).
<i>Medical Education:</i>	Papers by Dr. S. P. Chen (Peking) on "Medical Education in China"; Dr. L. Y. Tsao (Nanking) on "Medical Education for Nurses"; Dr. J. H. Liu (Shanghai) on "Shall we leave it all to the Rockefeller Foundation?"
<i>Medical Text-books and Publications in Chinese:</i>	Papers by Drs. N. Abel Tang (Shanghai) and C. V. Yui (Shanghai).

(1091) Describes the reconstruction program adopted at Hankow which was burnt down during the Revolution by the Imperial forces. These included Anti-Rat measures, adopted in July, 1914, and a Vaccination campaign, instituted in the year following (Nat. Med. Jl., 1916, No. 1, p. 48).

Standard of Medical Practitioners: Papers by Drs. P. M. Jee (Tientsin) and H. T. Chiang (Tayeh).

Patent Medicines: Papers by Drs. E. B. Young (Changsha), E-li Day (Shanghai) and S. F. Lee (Hongkong).

Five *resolutions* were passed by the Conference for submission to the Government, asking for:—

- a. Registration of medical practitioners and dispensaries;
- b. Establishment of a Central Medical Board in Peking;
- c. Control of Tuberculosis and Venereal Diseases;
- d. Establishment of a proper Public Health Service;
- e. Allotment of ten scholarships yearly for medical students from the Indemnity fund.

It was further decided to admit

- (a) Regular members (graduates of Chinese and foreign schools recognised by the Association);
- (b) Associate members (from non-recognised schools);
- (c) Honorary members (distinguished persons);
- (d) Affiliated members (practitioners of other nationalities).

The following were elected as honorary members:—

Mr. Chou Hsueh-hsi, Minister of Finance;
 Mr. Chu Chi-chien, Minister of Interior;
 Dr. Arthur Stanley, Munic. Health Off., Shanghai;
 Dr. Douglas Gray, Physician Brit. Legation, Peking;
 Dr. Edward H. Hume, Director of Hunan-Yale Hospital;
 Dr. G. E. Morrison, Advisor to the Chinese Government;
 Dr. H. S. Houghton, Dean of Harvard Medical School, China;
 Dr. W. W. Peter, Secretary Council on Public Health;
 Dr. Dugald Christie, President Mukden Medical College;
 Dr. Duncan Main, Hangchow.

Sub-committees were appointed on Membership (Dr. W. S. New), on Terminology (1092), on Public Health (Drs. F. C. Yen, Wu Lien-teh and E. S. Tyau-1093), on the Journal and Publications and on Finance.

A large number of *exhibits* was displayed at the time of the conference, comprising sections on Plague (Dr. Wu Lien-teh), the teaching of public health (Drs. Peter and Wu Lien-teh), etc., which were visited daily by hundreds of persons (1094).

We will now deal with the work of the *China Medical Missionary Association* up to 1916. A triennial conference was held at Peking between January 13 and 17, 1913, at which 85 of the 500 odd members attended. In the absence of Dr. Cousland, it was opened by Vice-President O. T. Logan. The members of the Conference were received on January 15 at the Winter Palace by President Yuan Shih-k'ai, who—in response to an address presented by the chairman—expressed his sympathy with, and appreciation of, the work of the Association.

(1092) To co-operate with the representatives of the China Med. Miss. Assoc. and the Japanese Returned Students' Association.

(1093) To co-operate with the China Medical Miss. Association and the Y.M.C.A.

(1094) National Med. Jl., 1916, No. 1, *passim*.

As at previous gatherings much attention was paid to the subject of *medical education*. Dr. Thos. Cochrane's paper on "Medical Education in China" and the contributions of Drs. P. J. Todd and Dugald Christie, both dealing with "Co-operation with the Chinese in Medical Education Work" were thoroughly discussed, and the following resolutions formed:—

- (a) That before the Union Schools at Mukden, Peking, Tsinanfu, Chengtu, Hankow, Nanking, Foochow and Canton be efficiently staffed and equipped, no new medical colleges be started in China;
- (b) That the entrance requirements, the minimum of which is at present the passing of a Middle School, be raised to include at least two years of College course and training in a foreign language;
- (c) That the course should extend over five years, details to be worked out by the Curriculum Committee;
- (d) That the minimum staff on the field should be ten men giving full teaching time or, providing for furloughs, language study, etc., a total of fifteen teachers, either foreign or Chinese, should be available;
- (e) That buildings and equipment be sufficient and clinical opportunities to the extent of three beds to each student in the two final years should be the minimum hospital provision;
- (f) That a Standing Committee be appointed to represent the views of the Association in dealing with the schools and in seeking to obtain the co-operation of the Chinese.

A further resolution moved by Dr. Christie expressed the hope that the medical schools would be gradually staffed, financed and controlled by the Chinese themselves, and emphasized the desire of the Association to co-operate with the Chinese Government and to bring their teaching into line with the regulations of the Board of Education. A special committee appointed to act for the Association in approaching the Chinese authorities on all matters relating to medical education consisted of Drs. Christie, Neal, and T. Cochrane. Mr. Wong from the Board of Education also spoke at one of the meetings, dwelling especially upon the active interest taken by the Government in the subject of Terminology.

A number of papers, e.g. "Medical Inspection of Schools", by Dr. Richard A. Bolt; "The Need of Physical Training, etc." by Dr. Arthur Shoemaker; "The Sanitary Organisation of China" (Dr. Arthur Stanley); "A Sanitary Propaganda for China" (Dr. Elliot I. Osgood) dealt with *Public Health* aspects. Resolutions were carried expressing sympathy with the Government's struggle against the opium evil and drawing attention to injury wrought by foreign intoxicating liquors as well as cigarette smoking by minors.

Two valuable papers on the treatment of *cholera* were presented by Drs. Duncan Whyte and O. T. Logan, while Dr. Herbert E. Coe, Shanghai, gave interesting particulars as to the method of injecting normal saline adopted by Dr. Cox in Shanghai. A *Final Research*

Report was presented by Dr. Maxwell to which a report on faeces examination carried out in the surgical service of the Soochow Hospital was added by Dr. John A. Snell.

The meeting elected Drs. Duncan Main as President, C. F. Johnson as Vice-president and H. H. Morris as Secretary and Treasurer (1095).

The next Conference of the China Medical Missionary Association was held at *Shanghai*, February 1-15, 1915, 113 members attending. Dr. Duncan Main, in his *presidential address*, dwelt specially upon the necessity of speeding up the translation work which was sadly lagging behind.

Papers dealing with *medical education* were read by Dr. Todd, Canton, ("Hospital Internes: Practical Work by the Senior Classes in Medical Colleges"); E. M. Merrins, Shanghai ("The Educational Standards, Pre-Medical and Medical, of Mission Medical Schools"); F. C. Yen, Changsha, ("An Example of Co-operation with the Chinese in Medical Education"); J. G. Cormack, Peking ("Language Medium of Medical Education in China"). Dr. Maxwell, on behalf of a committee to consider the question of the Number and Location of Medical Schools reported that five geographical areas, viz., North, East, Central, West and South should be considered and the ideal arrangement would be one school teaching in Chinese and one in English. His proposals were as follows:

- North.* An English-teaching school should be located at Peking, those desiring Chinese education being directed to Mukden or Tsinanfu.
- East.* One medical college teaching in English would be sufficient. Therefore the schools using this language should unite. Should a Chinese College be needed, Nanking should be considered; but possibly these needs could be supplied by the institutions at Tsinanfu and Hankow.
- Centre.* Changsha to be the English teaching school and Hankow the Chinese one.
- West.* Chengtu to be the centre, the best medium for teaching to be decided by local conditions.
- South.* Canton to be regarded as the natural centre, and in determining the language, due consideration be given to the existence of the Medical Department of Hongkong University.

It was further moved that no new schools be opened until the above mentioned were adequately staffed.

In regard to schools for women, the Association should take cognisance of the schools at Peking, Soochow, and Canton, which should be affiliated, for examination purposes at least, with neighbouring men's colleges.

(1095) *China Med. Jl.*, 1913, pp. 51-106.—Some matters in connection with this Conference will be dealt with in due course.

The Curriculum Committee proposed the establishment of a Council on Medical Education, the duties of which should be:

- (a) To outline acceptable standards for medical schools;
- (b) To act as a central body of reference in matters concerning the adequate occupation of the field;
- (c) To keep in touch with all medical schools through the Executive Secretary of the China Med. Miss. Assoc.;
- (d) To keep in close touch with the Board of Education and other national and provincial educational organizations.

The Committee further outlined the requirements to be met by schools to be *approved* by the Association, providing among other things for a hospital year to follow the regular course of instruction. Schools meeting not all but a certain minimum of the requirements should be designated as "Class B" and should give *certificates* of graduation only instead of degrees to successful candidates.

The report of the Curriculum Committee was formally adopted by the Conference.

Important papers dealing with *Public Health* work were:—

- "How to Initiate Public Health Work in Chinese Cities," by Dr. Stanley;
- "Awaking the Sanitary Conscience of China", by Dr. Wu Lien-teh;
- "A Plea for a Campaign of Public Health Education in China", by Dr. E. S. Tyau.

A temporary committee to deal with schemes of preventive medicine, consisting of Drs. Houghton, Peter, Wu Lien-teh, Osgood and Hume, recommended that the Conference should create a permanent Council on Public Health and that steps be taken to co-operate with the Y.M.C.A. in national health propaganda. These suggestions were adopted, and Drs. Houghton, Peter, Yen, Tooker, Kahn, and Smyly were elected for the committee.

Dr. H. S. Houghton reported on behalf of the *Research Committee* that a study of the flora of ulcers of the extremities had been made with an idea of determining the distribution and characteristics of the lesions known as tropical ulcer. The Conference also emphasized the desirability of establishing a proper *Research Institute* in China.

The foundation of the *National Medical Association* was noted with satisfaction and assurances of warm sympathy and co-operation extended.

Among other papers read, the following deserve notice:—

"Nursing Requirements in Our Mission Hospitals" by Miss E. Hope Bell, Hankow; "Diet Lists for Use in the Hospital of the Union Medical College, Tsinanfu," by Dr. Neal; and papers dealing with the problem of *Tuberculosis* by Drs. E. Margaret Phillips, Kaifengfu, Harold Balme,

Tsinanfu, and Charles K. Roys, Weihsien, Shantung. *Public lectures* were delivered as follows:—

Professor Robertson spoke on "Popular Lectures as Possible Adjuncts to Medical Missionary Work in China";

Dr. Merrins on "Heredity" and

Dr. Wu Lien-teh on the "Manchurian Epidemic of Pneumonic Plague."

The meeting elected Dr. Venable as President, Dr. Maxwell as Vice-president, Dr. H. H. Morris as Secretary and Treasurer, Drs. A. F. Cole and Merrins as Editors (1096).

Before continuing to describe the activities of the two Associations, it is necessary to give more details in regard to the institution of *public health propaganda*.

In the preceding chapter reference was made to the election of a Committee of Medical Propaganda by the China Medical Missionary Association in 1910, composed of Drs. Booth, Logan and Meadows. The Revolution as well as the death of two members of this committee (Drs. Booth and Meadows) prevented development of the plan.

At the suggestion of Dr. Cousland, the Young Men's Christian Association (Y.M.C.A.) added to its staff Dr. W. W. Peter who in 1913 laid plans for public health education through lectures illustrated by mechanical devices.

The *Council on Public Health* created by the 1915 Shanghai Conference announced in March of the same year that it was prepared to send newspaper copy on health subjects to all parts of China through its Secretary Dr. Peter. A large share of the regular editorial work was done by Dr. W. E. Macklin, Nanking.

In 1916 the *Joint Council on Public Health Education* was formed by the two Medical Associations in co-operation with the Y.M.C.A., each organisation pledging itself to provide part of the expenses (1097). The further history of this body will be dealt with in the following paragraphs.

A *Joint Conference* of the two Medical Associations was held at Canton, January 24-30, 1917, attended by 82 members of the China Medical Missionary and 88 of the National Medical Association, which enjoyed the most hearty support of the Civil Governor Chu Ching-lan (朱慶瀾).

Presidential addresses were read first by Dr. Wu Lien-teh and then by Dr. Venable. The former, speaking on "Some Problems before the Medical Profession of China" (1098), first dwelt upon the necessity

(1096) China Med. Jl., 1915, pp. 93-124.

(1097) Ibidem, 1913, p. 78, 1915, p. 136, Peter, 1926, p. 231; National Med. Jl., 1916, No. 2, p. 3; Latourette, l.c., pp. 590, 759.

(1098) Published in extenso in the National Med. Jl., 1917, p. 5.

of adopting a code of medical ethics to which all should willingly conform; next, upon the need of creating a proper and uniform standard for medical colleges in China. He then urged the establishment of a Central Medical Council in Peking, which should include among its duties:—

1. The decision of language or languages to be recognised in the teaching of medical students throughout China;
2. The fixation of a minimum standard of general education required of students before entering upon medical studies;
3. The fixation of a minimum medical curriculum;
4. The supervision of examinations, including, if required, the functions of a Central Examining Board for the whole country;
5. The recognition of medical schools other than those already recognised by the Board of Education;
6. The recognition of hospitals where students may obtain their clinical teaching;
7. The drawing up of laws and regulations affecting the medical and pharmaceutical professions in China and their enforcement;
8. The issuing of a medical register containing the names of all those qualified to practice medicine in China;
9. The adoption of a general nomenclature of medical terms in Chinese.

The address then dwelt on the opportunities of the female medical practitioners (who attended in numbers at the conference), saying that the Associations should encourage rather than discourage the partiality which Chinese women as a rule had for doctors of their own sex. The need of properly trained women nurses was likewise stressed.

Finally, reviewing the educational situation at Canton, the great number of schools existing was deplored and the hope expressed that the Kung Yee, Kung Li (Government) and Kwong Wah Colleges might unite and form a Kwangtung Union Medical College, continuing with Chinese teaching.

The Conference endorsed the desirability of forming a *Central Medical Council*, passing a strong resolution to be submitted to the Board of Education.

Papers dealing with *educational problems* were read by Dr. Hume and Mr. Roger S. Greene, Resident Director of the Rockefeller Foundation in China. The former gave a comprehensive survey of the situation, enumerating a total of 26 colleges with 1,500 students, 136 of whom were women, while Mr. Greene gave an interesting account of the activities of the Foundation in China. Chinese papers were presented by Dr. C. Voonping Yui on "Medical Terminology", Dr. Liu Tak-san (Canton) on "The Terminology Problem" and Dr. Ho Ko-tsun

(Hongkong) "How to Expedite Translations". Then lengthy resolutions of the Council on Medical Education:

1. Noted with satisfaction that no new medical colleges had been started under missionary auspices, but stressed on the other hand that none of the existing schools was up to the requirements laid down at the two previous conferences;
2. Recorded approval of the action of the Board of Managers, Nanking University, in closing their medical school, thus strengthening the work at Tsinanfu;
3. Likewise expressed satisfaction at the attitude of the St. John's Pennsylvania trustees in being prepared to close when adequate provision would be made for medical education in English at Shanghai.
4. The progress made at Mukden and Chengtu was favourably commented upon and the hope expressed that a strong medical school would be established in South China under missionary auspices;
5. Recommended further co-operation and concentration of medical education for women under Christian control.

A report on the *Council on Public Health Education* was rendered by Dr. Peter supplemented by a vivid lecture, illustrated with lantern slides, on "Further Development of Public Health Educational Work". A proposal to appoint Dr. S. M. Woo as *Associate Chinese Secretary* to carry on the work during Dr. Peter's absence in America found ready financial support from both Associations.

Dr. Wu Lien-teh's paper on the "Menace of Morphine" made a deep impression, and a resolution was adopted urging the Government to confine, through adequate steps, the employment of morphine to legitimate medicinal uses.

A paper on *Standardisation in Mission Hospital Work* was presented by Dr. Houghton and a resolution passed providing (a) for standardised mission hospital statistics; (b) a standardized system of hospital accounting; and (c) the organisation of a purchasing agency for mission hospitals, if practicable.

The problem of *nursing* was dealt with by Dr. Mary L. James (Wuchang) in a report on "Problems connected with the Training of Nurses in China". A resolution moved by her urged the appointment of a committee to discuss the curriculum and other matters connected with the training of nurses in co-operation with the Nurses' Association.

Another resolution introduced by Dr. Balme stressed, "in the interests of Public Health and the prevention of vermin-carried disease as well as for the protection of medical missionary workers", the *equipment of hospitals* with an adequate supply of hospital bedding and clothing and other appropriate facilities.

Dr. G. Duncan Whyte (Swatow) in a short but lucid report on the activities of the *Research Committee*, explained why the apparently

uninteresting subjects of anatomy and physiology had been selected for study. Contributions to these important subjects were on "Height, Weight, and Chest Measurements" by Dr. Whyte, on "Pelvic Measurements" by Dr. M. E. Garner (Shanghai), "Observations on Blood Pressure" by Dr. E. H. Hume (Changsha) and on "Blood Examinations of the Chinese" by Dr. Tyau.

A valuable contribution was Dr. H. G. Earle's (Hongkong) paper on *Diabetes mellitus*, which was well discussed. Noteworthy also was the report of Dr. Liang Sau-wan on her experiences in "4,260 Cases of Childbirth".

The China Medical Missionary Association elected Dr. C. J. Davenport as President, Dr. Cochran (Hwaiyuan) as Vice-president, Drs. Morris and Beebe as Secretaries, Merrins and Hutcheson (Kash-ing) as Editors. The Committee of the National Medical Association was composed of Dr. Wu Lien-teh (President), Dr. Tang Erh-ho (Director of the Government Medical College in Peking and President of the Medical and Pharmaceutical Association) and Dr. Voonping Yui as Vice-presidents, Drs. Chow Kuei (Shanghai) and J. Heng Liu (Shanghai) as Chinese and English Secretaries respectively, E. S. Tyau as Treasurer and T. K. M. Siao as Business Manager(1099).

A Kwangtung Branch of the National Medical Association was organised at the time of the Canton Conference. Its original membership of 77 soon increased to 92, including 26 medical women. A Hongkong Branch was formally inaugurated on February 5, 1917. Other branches formed up to September 1917 were (besides the central group at Shanghai) in *Peking and Tientsin*, *Soochow*, the *Straits and Malaya* and *Europe*(1100).

An interesting undertaking of the Joint Council on Public Health Education was the conducting of a *National Health Essay Contest* to stimulate the interest of students in problems of public health. 51 papers were submitted on the chosen subject "Present Health Conditions in China and How They May Be Further Improved", the first prize being awarded to Mr. Yang Tuk-pau (楊德寶) of St. John's University, Shanghai, the second to Ling Pu-chi (林步基) of the same institution, and the third to Wu Pao-kwang (吳葆光) of the Peking Union Medical College(1101).

The success of the 1917 Conference was perhaps surpassed by the gathering in the newly-built Union Medical College at *Peking* between February 21 and 28, 1920, at which 210 missionary doctors

(1099) *China Med. Jl.*, 1917, pp. 121-164; *Nat. Med. Jl.*, 1917, pp. 1-4, 45-63.

(1100) *Nat. Med. Jl.*, 1917, pp. 47, 122.

(1101) *Ibidem*, p. 65.—The paper awarded the first prize is published in the same issue, pp. 67-81.—A second Health Essay Contest was conducted in 1919 (see *Nat. Med. Jl.*, 1919, p. 136).

and 96 members of the National Medical Association were present. Dr. Davenport, President of the China Medical Missionary Association, took the chair during the morning general sessions, while Dr. Wu Lien-teh presided over the evening general sessions. The afternoons were devoted principally to sectional meetings.

The report of the Council on *Medical Education*, presented by Dr. Balme, laid stress on the urgent need of greater support being given to the medical colleges at Mukden, Changsha, Tsinanfu and Foochow. It was followed by two papers on pre-medical standards by Drs. H. W. Adolph (Tsinanfu) and F. C. Yen, while Dr. G. Hadden (Changsha) dealt with "The Training of Hospital Assistants" and Miss Nina D. Gage spoke on the training of nurses. A much discussed problem was the provision of medical education for women, it being finally resolved that an attempt should be made to establish a strong school teaching in Mandarin at Peking. Dr. S. Koh, who took part at the evening session of February 23, presented a letter from the Minister of Education where the Government policy in regard to medical schools was thus outlined:—

1. To establish new medical schools as soon as conditions will allow, on the basis of one medical school for each province;
2. To improve and extend such schools as were already established;
3. To encourage the study of medicine and to maintain for the scientifically trained doctors a high social status;
4. To cause to be organised at proper localities such institutions or facilities of investigation as will aid specialists in their research work;
5. To regulate the practice of doctors trained in the traditional way with a view to the unification of standards required of medical practitioners.

Reports dealing with the activities of the Joint Council of *Public Health Education* were submitted by Dr. S. M. Woo, who pointed to the great progress that had been made and the amount of literature that had been circulated, and by Dr. Peter, who described his visit to America and England as well as the plans made for enlargement of the work. They were followed by Dr. Clara Sargent who made a brief statement on the plans for "Health Education in Girls' Schools and among Women and Children", while Dr. Li outlined the part taken in the work by the Y.M.C.A.

It may be added that the Council on Health Education, as it was hereafter called, was strengthened at the time of the Peking Conference by the Young Women's Christian Association becoming its fourth member.

Dr. W. H. Lennox (Peking) presented a paper on "The Health of Missionaries in China", and Dr. Yen on "A Campaign against the Hookworm". Dr. Wu Lien-teh gave an address on "The Latest Phase

of the Narcotic Problem" (1102) in which he showed figures representing the enormous increase of morphine smuggling into China and urged upon his colleagues to take every possible step to stamp out this evil. A strong resolution calling attention to this aspect was unanimously adopted.

Much information on *Missionary Hospital Work* was contained in a report submitted by Dr. Harold Balme and based upon questionnaires which had been answered by 199 out of the 250 hospitals open. Although many of them were well-equipped and up-to-date, some had no fly screens for kitchens or latrines and possessed no baths or bedding. The urgent need for improvements was emphasized.

Dr. John Snell (Soochow) followed with a paper on the "City Hospital", recommending that each important city should establish at least one modern hospital costing \$300,000 with an annual budget of \$75,000. Dr. Snell also urged that influential Chinese residents should be invited to serve on the boards of management of each mission hospital.

Dr. A. C. Hutcheson (Nanking) who spoke on the "Up-country Hospital" wished to place well-trained Chinese physicians on the same footing as foreigners, so as to prepare for the time when these hospitals could be entirely managed and supported by Chinese.

Prominent among the sectional meetings were the deliberations on Anatomy and Anthropology, where numerous interesting papers were read (1103). An impetus was given by these efforts to the foundation of an *Anatomical and Anthropological Association of China* (1104).

In addition to the two Associations and other medical societies mentioned above, a medical union called in Chinese 蘇州醫學公會 was founded in 1918 at *Soochow* by the joint efforts of Chinese and foreign modern-trained practitioners. Its President was Dr. Tsai of the Provincial Medical School with Dr. W. B. Russell as Vice-president, Dr. Y. S. Chen of the Soochow Hospital as English Secretary and Dr. Van, formerly of Dr. Wilkinson's hospital but now in private practice, as Chinese Secretary (1105).

A noteworthy undertaking was the *Kiangsu Public Health Association* founded in 1916 at Nanking. Its first President was the Hon. Chang Chien while as Vice-presidents were elected Messrs. Chiu Lai-chi, Board of Works and head of the gentry, Chiang I-yuen head of the Government Normal School, Wang Kwei-ling, Chief of Police,

(1102) Published in extenso in the Nat. Med. Jl., 1920, p. 65.

(1103) Published or summarised in the Supplement to the 1920 Volume, China Med. Jl.

(1104) China Med. Jl., 1920, pp. 416-451 & Supplement; Nat. Med. Jl., 1920, pp. 1-4.

(1105) China Med. Jl., 1918, p. 397.

and Dr. P. W. Kuo, Principal of the Government Normal School. The general secretary and treasurer was Mr. Wang Tsing-an, Health Commissioner. Eligible for regular membership were (a) graduates of medical schools; (b) those who had taken the examination of the Department of Health of the Police and had been certified; (c) officers of the Department of Health; (d) prominent officials, educators, gentry, and merchants specially interested in the promotion of public health. The program of the association provided for work under four departments:—

- (1) Department of Medical Education, which shall promote the study of hygiene and medicine and aid in the care of the sick (Chairman—Dr. Shields);
- (2) Department of Investigation, which shall investigate foods and drugs (Head—Prof. Lee Ying);
- (3) Department of Inspection, which shall enquire into sanitary conditions (Head—Dr. Macklin);
- (4) Department of Prevention of Epidemics (Head—Dr. Evans);
- (5) Home Sanitation (Head—Dr. Tsao) (1106).

A *Women's Social Service League* was organised at *Changsha* in autumn of 1913, the work—though instituted with foreign help—being entirely done by Chinese ladies. Two paid assistants were employed, viz., a District Nurse, Miss Wu, who had been trained in Hankow and was specially qualified for obstetrical work, and Mrs. Yang, employed to investigate cases referred to her at the hospital clinics and to arrange, through the League, for help to really needy people.

An educational campaign was conducted, special stress being laid upon tuberculosis and infant mortality. Hand in hand with the campaign for the children vaccination was offered on a large scale and milk prepared in suitable dilutions for infants at the Yale Hospital was distributed by three stations—either free or against a small payment.

The officials of the city showed a splendid spirit of co-operation, the Bureau of Hygiene asking its medical advisers to arrange for a school for midwives so that a certain amount of instruction in sanitary methods might be given until a sufficient supply of trained obstetrical nurses was available (1107).

The social service section of the Federation of Women's Boards of Foreign Missions sent in 1919 an *industrial specialist* (Dame Adelaide Anderson) to China (1108).

Another promising beginning in this field was the organisation in September, 1919, of an *Industrial Hospital and Dispensary* at the

(1106) *Nat. Med. Jl.*, 1916, No. 2, p. 40.

(1107) Lotta C. Hume, *China Med. Jl.*, 1914, p. 331.

(1108) *Latourette, l.c.*, p. 792.

Yangtzepoo Social Centre, *Shanghai*, established at the request of the cotton-mill owners in the district and subsidized by the companies, who also paid for the treatment of their employees when injured or ill. A description of the useful work of this institution was given by Dr. H. W. Decker(1109).

Mention must finally be made of endeavours in *moral welfare work*. At *Shanghai* a Moral Welfare Committee, consisting of representatives from about a dozen religious and charitable associations, was formed on May 16, 1918, the aim of which was to abolish commercialized vice in the community. The committee was so successful in its campaign that in 1919 the meeting of the rate-payers of the International Settlement decided to appoint a Special Vice Committee to be composed of three persons nominated by the Municipal Council, three by the Welfare Committee and three to be chosen by the six nominated members. This committee submitted on March 9, 1920, through its chairman, Mr. Skinner Turner, Assistant Judge of H.B.M. Supreme Court, a lengthy report, where it recommended among other measures the registration and gradual elimination of brothels of all nationalities. It was demanded at the same time that the examination of prostitutes by the Health Department should cease, but that further provision for treatment of venereal disease be undertaken and suitable health propaganda conducted. On December 21, 1920, ballots were drawn with a view to closing down one fifth of the brothels registered (about 900 with ca. 6,000 inmates) on April 1, 1921(1110). Corresponding decreases were made in the succeeding years.

In 1920 an association to look after the interests and welfare of Chinese prostitutes was organized at *Hankow* by the leading gentry. Its purpose was to provide asylum for miserable prostitutes and concubines and to ameliorate the existing conditions of the lower class of women(1111).

It is hardly necessary to state how much the importance of *medical education* had become enhanced during the period now under review. While formerly it was often not easy to find openings for those graduates who did not want to engage in private practice, now the demand for men willing and able to work not for their own benefit but for the public weal, tended to become greater than the supply. And the difficulties of staffing and equipping the schools properly continued to be great.

To proceed, as far as possible, in chronological order, mention may first be made of the beginning of preliminary medical teaching at *Tsingtao* in June, 1911. About thirty pupils were taught by

(1109) *China Med. Jl.*, 1924, p. 226.

(1110) *Nat. Med. Jl.*, 1919, p. 3, 1920, pp. 64, 126, 137, 226.

(1111) *China Med. Jl.*, 1920, p. 702.

German professors in the German language and plans were made to start with their clinical education by erecting in 1914-15 a suitable hospital with about 200 beds and laboratories. The occupation of Tsingtao by the Japanese in 1914 put an end to these preparations (1112).

At the same as the school at Tsingtao (June, 1911), a Japanese medical school was opened by the South Manchurian Railway at *Mukden*, with the Viceroy as honorary president, and a few prominent Chinese officials as consulting members. Its course was divided into a preparatory and a special. The former, extending over two years, was designed to teach Chinese students the Japanese language besides imparting general knowledge. Japanese students who had finished a Middle School were directly admitted into the special course. This was sub-divided into medicine and pharmacology, requiring four years and three years respectively. A post-graduate course, occupying over a year, was also provided for a limited number of students.

Dr. Faber of the League of Nations thus wrote in his 1930 report about the school:

The Japanese Manchurian Medical College has a high standard. Here we find excellent laboratories and class rooms for pre-medical and pre-clinical teaching and a large hospital for clinical education. But the full teaching of the University Medical College is nearly all given to Japanese students and more than half of them go back to Japan where they are qualified to practice.

The course of the Manchurian Medical College is said to be of the same standard as that of the Imperial Universities of Japan. It consists of three years pre-clinical teaching, four years medical course and one year voluntary post-graduate course.

Besides this higher training which is taken almost only by the Japanese, there is a "practical course" for Chinese students. The entrance requirement for this is graduation from middle school after an entrance examination and a year preparatory course to acquire the Japanese language. Thereafter the practical course is of four years' duration.

In 1929 there were as students in the medical college 216 Japanese and 23 Chinese, in the practical course 107 Chinese. 27 Japanese and 1 Chinese graduated from the medical college and 15 Chinese from the practical course. The teachers and the equipment were the same for both courses.

As the principle of the two schools is the same which to a certain degree is accepted by the Ministry of Education in China, it is interesting to examine how the system is working in *Mukden*. A rather short visit in the school gave the impression that while the teaching in the college was of a high standard, there was not so much interest in the practical course for Chinese in the Institute (1113).

(1112) Wu Lien-teh, *China Med. J.*, 1914, p. 111; Report of the China Medical Commission, Rockefeller Foundation, p. 38.

(1113) *Customs Decenn. Rep.*, 3rd Issue, 1913, p. 33; Dr. Faber's Report (L.O.N. C. H. 961, 1931).

We have already alluded to the difficulties with which the educational work of the missionaries at Mukden was beset. A new up-to-date hospital with 110 beds was completed in 1907, but since the training of students seemed not feasible, a scheme was initiated in 1908 for the training of dispensers. Suddenly the outlook changed. A site contiguous to the hospital and admirably suited for a medical college was bought by the guild of a southern province which proposed to erect a hall for theatricals, banquets, etc. However, when the Viceroy heard of this untoward transaction, he bought the property and sent the title-deeds to Dr. Christie, the money being afterwards provided by Chinese subscriptions. In 1909 both the Viceroy and the Governor paid a state visit to the hospital and promised a grant of 3,000 taels per annum towards the establishment of a medical college. A sum of about \$5,000 was shortly afterwards subscribed by officials and gentry and further sums were procured by Dr. Christie in Scotland.

The result was that in 1911 a large three-storied building was erected and the college opened on March 28, 1912, with 50 students to whom a course of five years was offered. The teaching was in Chinese but English was also taught to the pupils.

The staff (which suffered a great loss when Dr. Arthur Jackson, the first new teacher from England, succumbed to pneumonic plague while working in the 1911 epidemic) consisted in 1914 of seven foreign medical men devoting their whole time to the college and hospital besides a chemist and lecturers. The following list was published in 1919:—

Drs. Dugald Christie;	Drs. S. Robertson;
S. A. Ellerbek;	P. B. Pederson;
W. A. Young;	W. S. Neville;
R. Mole;	Taylor;
F. Simpson;	Mr. Frederick Crockart, M.P.S., Chemist;
Nairn;	Dr. A. Russell Young, Lecturer.

There were also six Chinese Assistants and Demonstrators.

The Report goes on to state that in June, 1917, the first class of students graduated, and in 1919, the second. Of these 25 graduates, 10 were appointed house surgeons and physicians in the Mukden hospital (and some of them helped at the same time in the practical teaching of biology, chemistry and pathology). Some graduates had entered the Army Medical Service or worked in other mission hospitals.

A fourth class of 35 was admitted in 1919 and a dispensary opened in the west of Mukden at the request and with the help of the Peking-Mukden Railway, to take care of their employees. This was in charge of one of the college graduates.

In the spring of 1919 Dr. Christie went home in order to raise additional funds. He was most successful in this. Specially nota-

worthy is a gift of £10,000 from Sir Joseph and Lady Maclay (in memory of their two sons who lost their lives in the war), given in order to enable the college to train women as well as men. This plan was realised, but the number of female students was restricted to 15% of the total.

Dr. Christie continued in charge of the college until 1923 when he retired after a most meritorious career of 40 years, handing over the school to Dr. Ellerbek of the Danish Lutheran Mission, which, together with the United Free Church of Scotland and the Irish Presbyterians, had taken part in the work from the commencement.

In 1926 there were ten full-time foreigners on the staff as well as six Chinese teachers, four of whom had received post-graduate training in Great Britain. In addition there were three part-time foreign teachers and several Chinese assistants. 1930 statistics spoke of 17 Chinese and 12 foreign teachers. In 1932 a total of 207 graduates was reported; 98 students (among them 24 women) were in attendance. The degree of the College is now recognised by the University of Edinburgh(1114).

The nucleus of the Union Medical College at *Foochow* was the Foochow Medical School of the Church Missionary Society, founded in 1911. In 1914, this Society in agreement with the American Board and the Methodist Episcopal Mission, formed a union college under joint management. For clinical teaching, the hospitals of the Church Missionary Society and of the Board were available while a building for lectures and laboratory work, together with some dormitories, was erected by the former. The staff in 1914 consisted of five foreign men. Instruction was in *English*, a preparatory course of one year and a medical one of five being offered. The school was closed in 1922 because of the depletion of its staff through death and withdrawal of representatives of the Church Missionary Society, the main supporters of the work(1115).

In the year 1911, great changes took place at the Medical School of St. John's University, *Shanghai*, from which Dr. Boone had recently retired. By a two year agreement the institution was united with the new *Harvard Medical School* (incorporated under the laws of Massachusetts 1911) and the amalgamated undertaking was opened in 1912. However, in 1913 the Harvard Medical School of China made a new agreement with the Red Cross Society of China by which the hospital and school of that Society were turned over to the Harvard

(1114) *China Med. Jl.*, 1909, p. 330, 1914, p. 39, 1920, p. 670, 1923, pp. 441, 683, 1926, p. 743, 1931, p. 681; *Customs Decenn. Rep.*, 3rd Issue, Vol. III, p. 33, 4th Issue, Vol. I, p. 53; *Rep. of the Rockefeller Commission*, p. 20; *Shields, China Christian Year Book 1931*, p. 385; *Chin. Med. Jl.*, 1934, pp. 191, 805.

(1115) *Rep. of the Rockefeller Commission*, p. 24; *China Med. Jl.*, 1923, p. 539.

Faculty. A course of five years was arranged for and instruction given wholly in English. The staff comprised, according to reports published in 1914 and 1915, ten foreign medical men (among them Drs. Henry S. Houghton, Dean and Professor of Tropical Medicine; Harold E. Eggers, Professor of Pathology and Bacteriology; Hans Thue, Professor of Clinical Medicine) while Dr. J. H. Liu was appointed Instructor in Surgery and W. S. New, Demonstrator in Anatomy.

The Harvard Medical School was closed on July 1, 1916, having been purchased by the China Medical Board of the Rockefeller Foundation with the expectation of creating a new medical school at Shanghai. The *Red Cross Hospital* continued to work under a grant from the China Medical Board for two years, carrying on the *training of nurses* which had been started in October, 1914, with a curriculum of three years. Then the property was returned to the Red Cross Society. A Sanitarium founded in 1918 by the physicians of the Seventh Day Adventist Mission with the aid of a handsome gift from a wealthy Chinese merchant in Hongkong, Mr. Au-Yang, was temporarily housed on the premises.

When the connection between the Harvard Medical School and St. John's was dissolved, the last-mentioned institution entered into a new agreement with the trustees of the Pennsylvania Medical School, formerly of Canton, by which their undertakings became united in 1914 at Shanghai under the title of *Pennsylvania Medical School, being the Medical Department of St. John's University*, which continues to exist. The new institution had a staff of thirteen professors and instructors and continued to teach in the English language. Being prepared to step aside in case the Rockefeller Foundation should realise its plan of creating a medical centre costing several million dollars at Shanghai, the Pennsylvania Medical School at first did not engage in any extensive improvements. When, however, in 1920 it was announced that the Foundation had given up its plans in regard to Shanghai, building operations for a new science laboratory to cost about \$100,000 were immediately commenced with the aid of a grant of Gold \$80,000 from the China Medical Board and Gold \$20,000 from the Episcopal Board of Missions in America.

A report published at the time stated that since 1901 fifteen students had received medical diplomas and twenty-five certificates. And, as shown by the following tabulation, the School numbered among its graduates some of the most prominent men to-day in the medical profession of China:—

- | | |
|----------------|--|
| Drs. F. C. Yen | (1903), then Dean of the Hunan-Yale Medical School at Changsha; |
| E. S. Tyau | (1903), physician at St. Luke's and professor of dermatology and clinical microscopy at Pennsylvania Medical School; |

- C. V. Yui (1907), physician at the Nanyang Technical Institute (died 1930);
- T. K. M. Siao (1901), then in private practice;
- T. M. Li (1907), ophthalmic surgeon at the Peking Union Medical College;
- U. K. Koo (1909), chief resident physician at St. Luke's;
- L. S. Woo (1916), studying in America, appointed instructor in orthopedics at Pennsylvania Medical School;
- G. Y. Char (1914), surgeon at the Peking Union Medical College;
- E. T. H. Tsen (1914), bacteriologist at the Peking Union Medical College;
- W. S. New (1907), formerly (after studying in America) orthopedic surgeon at the Peking Union Medical College; then in private practice;
- S. M. Woo, secretary to the Joint Council on Public Health Education;
- P. C. Kiang, Director, Dept. of Physiological Chemistry, Tsingtau Union Medical School.

The policy of the school being to increase the number of Chinese instructors, by 1926 the majority of the staff were Chinese who gave over three-fifths of the 3,669 hours in the curriculum. The total number of graduates from 1901 to 1930 inclusively was 113 (1116).

The *German Medical School* for Chinese at Shanghai enlarged its plant considerably during the years 1913-1914, among other buildings an up-to-date hospital for women and children being erected. Several students finished their course and successfully passed their examination, some taking a post-graduate course of one year in Germany in order obtain the M.D. degree. On the staff were Professors Dubois-Reymond, Krieg, v. Schab and Drs. Kurz, Birt, Blumenstock, Gerngross, Schultze-Jena, Fischer, Dold, Hoeffling besides other instructors. Two Chinese members, who commenced their activities during the period 1915-16, were Tung Dja-mu (pre-medical course) and Ching Yuen-ping (medical course). Drs. Fischer and Dold carried out some excellent researches on Dysentery, Kala-Azar and Sprue.

When diplomatic relations between China and Germany were severed, the School was closed by the authorities of the French Settlement. However, activities were continued in the Paulun Hospital under Chinese control, the German doctors enjoying here, as everywhere in China, unrestricted freedom and security. The history of the institution will be concluded in the following chapter (1117).

- (1116) China Med. Jl., 1911, p. 120, 1916, p. 120, 1917, p. 561, 1918, p. 399, 1919, p. 73, 1920, pp. 451-453, 1926, p. 755; Report of Rockefeller Commission, p. 28; Fifth Annual Rep., Harvard Med. School (1915); Nat. Med. Jl., 1920, p. 216, 1930, p. 796; personal information from Miss Anne Lamberton (May 21, 1931).
- (1117) Berichte ueber die Deutsche Medizinschule fuer Chinesen in Shanghai, 1913-16, *passim*; China Med. Jl., 1917, p. 268; 1930 Directory of the Nat. Med. Assoc., Shanghai, p. 25.

To complete this survey of educational activities in Shanghai, mention must be made of the foundation in 1918 by Mr. Sun Yuen-fei and other members of the German Trained Doctors' Club of the Tung Teh Medical School on Markham Road. Dr. Chiang Feng-chi (江逢治) was appointed as its first president and in 1919 a Board of Directors, composed of noted physicians and gentry of Shanghai was organized to assume general control and financial responsibilities of the school. In the same year a hospital in close connection with it was erected on Tsingtao Road (青島路), and in 1920 facilities were provided to admit women students. The work grew so rapidly that the financial resources could not keep pace with it—a situation which was remedied through contributions readily made by wealthy citizens approached during a financial campaign. Since 1926 Dr. P'ang Ching-chow (龐京周) has been the Dean of the School which up to 1930 has graduated more than 200 students. In 1929, 150 students were in training under 16 teachers(1118).

A remarkable undertaking was started, through the initiative of two leading citizens, at Tzeki, a few miles from Ningpo. Through their endeavours the Tzeki People's Medical Association (慈谿保黎醫會) was formed which, in its turn, opened a hospital in 1911 in hired premises under Dr. Wu Hsin-huang (吳欣璜), a former pupil of Dr. Venable in Kashing. The institution soon became so popular that there was an urgent demand for better accommodation; accordingly in 1912 a two-storeyed modern hospital was erected and in 1916 another modern block was added.

From the beginning *medical training* was given, first to one student, soon followed by others, both male and female. In 1917, three students received diplomas from the hands of the City Magistrate and continued to stay in the hospital for post-graduate work (1119).

Resuming the history of the *Kung Yee Medical School in Canton*, it must first be stated that in 1911 a new modern hospital with sixty beds was opened on the Bund. At the same time, the Deanship was taken over by Dr. Louis Hugh, a Chinese graduate of the University of Oregon.

In 1912 activities were extended to include the *Tsan Yuk Women's Medical School and Hospital* situated at Honam Island on the opposite bank of the river. This establishment, called in Chinese 養育醫院 had been founded in 1911, principally to take care of maternity and children's cases. The Kung Yee at the same time also took charge of the *Yan Tsai* hospital situated in the heart of Honam Island, and turned it into a clinic for out-patients.

(1118) Ibidem, p. 27; Shields, l.c., p. 269.

(1119) China Med. Jl., 1917, p. 247, 1918, p. 484.

It being clearly seen that the work had outgrown its accommodation on the Bund, the Government was approached and in December 1912, readily granted a convenient site outside the East Gate. By the year 1913 the number of students had reached 184 and the Faculty consisted of twenty-six members, comprising four foreigners (Drs. Todd, W. W. Cadbury, J. A. Hofmann and E. C. Machle—the three last on part-time service).

Further progress was made during 1914-1915 when ground adjacent to the site outside the city was bought (bringing it up to 90 Chinese acres or approximately 15 English acres). The School received official recognition from the Board of Education and the standard of entrance was raised. Dr. J. A. Hofmann was fully taken over by the School while Dr. John Kirk began on part-time.

The difficulty involved by simultaneous teaching at Canton and in the women's college on Honam Island led to the closing of the latter in 1916. Thus it became possible to raise the standard of the men's college through concentration of the staff, and in autumn, 1917, a pre-medical year was added to the course, bringing the curriculum to five years. Two Chinese graduates from America, Drs. Wong King-yip and Li Fung-cho were added to the staff, while voluntary part-time service was rendered by Drs. J. M. Wright, H. W. Boyd and J. O. Thompson. Arrangements were made for clinical instruction at the Canton Hospital and the John G. Kerr Hospital for the Insane.

In 1918 after 26 months of construction, new buildings erected at a cost of about \$180,000 were occupied on the site near East Gate. These comprised (a) a college building; (b) Anatomy building; (c) Hospital building with accommodation for 76 general-ward and 46 private patients; (d) Out-patient building. At the same time the long desired permission for *dissections* was granted, and scholarships amounting to \$2,000 were given by the provincial authorities. Dr. C. A. Hayes voluntarily took over the teaching of Diseases of the Eye, Ear, Nose and Throat.

In 1920 the executive power of the Faculty was cancelled leading to the resignation of Dr. J. A. Hofmann, who had been Dean since 1916. He was succeeded by Dr. Wong Hang-tong (1120).

As already alluded to there existed in Canton two other medical schools teaching in Chinese, viz. the *Government (Kung Li) Medical College* and the *Kwong Wah Medical College*. Little is known about the feeble existence of the former except that in 1921 its students, 51 in number, were turned over to the Kung Yee school to complete

(1120) Customs Decenn. Rep., 3rd Issue, Vol. II, p. 150; Todd, *China Med. J.*, 1913, p. 143; Report of the Rockefeller Commission, p. 28; *The History of Kung Yee*, 1925.

their education, the provincial authorities undertaking to pay the fee of these pupils (1121).

The Kwong Wah Medical College was a co-educational undertaking started in 1908 and conducted by the Association of the same name in connection with a small hospital opened in 1910. Later on it had also access to the Canton Hospital for clinical instruction. The number of teachers in 1929 was 33 and that of students 292.

Faber, in his 1930 report, found the standard of the school superior to that of the private schools in Shanghai, but thought the hospital facilities inadequate while only one big room was used for all laboratory teaching. From information published in 1935 it may be gathered that the original curriculum of four years had by then been lengthened to six years. A Nursing School, opened in 1921, offered a course of three years. The number of medical graduates up to 1935 was 426, that of nurses (also both male and female) 88.

A *Franco-Chinese Medical School* was founded in 1914 by the French Government on a prominent site on the Bund in Canton. Before that date a few Chinese students had attended clinics and took irregular courses at the Franco-Chinese Hospital (Doumer) without a definite curriculum. From 1914 onwards a five year course was offered in French, the instruction given by the three French doctors connected with the hospital and school being translated by Chinese graduates. By 1926 approximately 70 students had passed (1122).

As previously mentioned, the *Hongkong Medical School* was taken over in 1912 by the newly-opened University and its lecturers became members of the Faculty of the new institution. By 1914 some forty students had attended and were taught (as before, in English) by fifteen instructors. The professors of anatomy and physiology were both full-time men, while the lecturers on chemistry and physics were connected with the department of engineering. The professor of pathology was in charge of the government laboratory and also controlled the autopsies at the public mortuary. A new, excellently equipped building for anatomy became available in 1913 and it was hoped to add a wing for a physiological laboratory which, like that for pathology, had up to then been housed in the University building. Instruction in surgery was given at the Alice Memorial Hospital, medicine mostly at the Tung Wah Hospital, but it was planned soon to open the Government Civil Hospital to the students.

Special buildings for Physiology, Pathology and Tropical Medicine were opened in 1919. A noteworthy event of the year 1920 was the

(1121) Ibidem, p. 18.

(1122) Rep. of the Rockefeller Commission, pp. 9, 37; Wu Lien-teh, *China Med. Jl.*, 1914, p. 110, Thomson, *ibidem*, 1926, p. 795; 1930 *Directory of the Nat. Med. Assoc., Med. Institutions*, p. 4; Shields, *l.c.*, p. 368, personal information from Dr. Cadbury; *China. Med. Jl.*, 1935, p. 1013.

election of Dr. Wang Chung-yik to the post of Professor of Pathology and Bacteriology. He had originally studied at the Peiyang Medical College, Tientsin, afterwards graduating as M.B. and M.D. at Edinburgh. During the war he became first Assistant Curator of the Museum of the Royal College of Surgeons and later on, Lecturer of the University in Bacteriology. It is a matter of great regret that Prof. Wang, who had published a number of scientific papers on tuberculosis, serology of syphilis, etc. as well as a "Handbook of Pathology" died—at the age of 42 years—in December, 1930.

From a report published in 1933 it can be gathered that the faculty staff consisted of whole-time professors in anatomy, physiology, pathology, medicine, surgery, and obstetrics and gynaecology with eight full-time assistants and one demonstrator. Besides there were part-time lecturers in ophthalmology, tropical medicine, therapeutics, radiology, venereal diseases, a part-time tutor and a part-time demonstrator in anatomy and a part-time demonstrator in materia medica and pharmacy. The number of students had reached 154, 14 of whom were women. The degree of M.B., B.S. had been conferred upon a total of 198 graduates, 11 of them being women. The degree of M.D. had been awarded to 7 graduates, that of M.S. to only one (1123).

Short reference has already been made to an order of the Board of Education issued on November 22, 1912, outlining the curriculum of medical study. This referred particularly to *Medical Special Colleges*, institutions intended to correspond to similar establishments existing in Japan. Their history goes back to the year 1909 when an Imperial edict ordered the foundation of such schools with hospitals in every provincial capital. We have seen how the authorities at Mukden—evidently carrying out this mandate—made an attempt to establish educational work. Some provincial schools were actually started before the Revolution which, with the exception of that at Canton (see above), appear to have been rather short-lived.

After the Revolution, better progress was made. In 1912 official status was given to the *Peking Medical Special College* (founded in 1911) and Dr. Tang Er-ho was appointed its first director. As can be gathered from the report of the Rockefeller Foundation, the school adopted the curriculum of four years as prescribed by the Board of Education (1124). Instruction was in Chinese but much attention was paid to the teaching of German. About seventy students (two classes) were taught by ten professors, mostly Chinese who had graduated in Japan and a few Japanese. The instructor in German was

(1123) Report of the Rockefeller Commission, p. 40; Nat. Med. J., 1920, p. 64, 1930, p. 796; 1930 Directory of the Nat. Med. Assoc., Med. Institutions, p. 7; Chin. Med. J., 1933, p. 1456.

(1124) Preparatory and graduate departments could be added to the medical special colleges if necessary and feasible.

a Chinese who had studied at Tsingtao. Small laboratories were fitted up in Chinese-style buildings and preparations made to establish a small hospital for clinical teaching (which was soon actually opened). The subsequent history of this school is referred to in the following chapter.

A medical special school was also opened in 1912 at *Hangchow* (Chekiang) and began to function on a larger scale in 1913 when a course in Pharmacy was created. Called hereafter the *Chekiang Provincial Medical and Pharmaceutical College*, this institution had trained up to 1927 361 medical men and 130 pharmacists. It possessed in 1929 a staff of 24 teachers who gave instruction to 70 medical students (two classes) and to two classes of 13 pupils in pharmacy. According to a 1935 report the teaching staff had been increased to 27 (11 full time). 104 beds were available for clinical teaching.

Another educational enterprise in Chekiang Province was the school connected with the *Kashing Hospital* (嘉興醫院) and established in 1916 by Dr. Hsia Chen-wen (夏振文), a graduate of the Chekiang Medical College. In 1921 it had an attendance of 15 pupils.

In 1913 the *Kiangsu Provincial Medical Special College* was established by the authorities at *Soochow*. Its five principal professors were Chinese trained in Japan. A year's preparatory work in physics, chemistry, etc., was given to the students before they were admitted to the medical school proper. The number of students which in 1914 was 66, had increased to over one hundred in 1919 when the third commencement was held, 10 men and more than 30 women graduating. Soon afterwards the school moved to new quarters outside of Chang Mung.

Two medical schools founded about the same time were at Nanchang and Wuchang, in which cities short-lived provincial colleges appear to have existed before the Revolution. The former, though called the *Nanchang Public Medical College* was a semi-private undertaking but received a subsidy of \$700 per month from the Kiangsi Provincial Government. When visited in 1914 by the Rockefeller Commission, it had five Chinese professors trained in Japan and one class of sixty students who were in their third year of study which included a preparatory course, as at Soochow. A small hospital of twenty beds was connected with the school.

The *Wuchang Medical Special College* was a private foundation. When seen by the Rockefeller Commission it possessed one class of eighty students, but an inadequate staff, including one missionary physician teaching anatomy, one Chinese teacher in physiology, who had graduated from a defunct military medical college (? Canton), and a Chinese instructor in hygiene who was formerly assistant at

the London Missionary Hospital, while chemistry, physics, etc. were taught by non-medical men.

To conclude this survey of Government medical schools, mention may also be made of the *Yunnan Army Medical College* founded in 1920. This institution up to the year 1929 had graduated but one class and then possessed a staff of 24 teachers who gave instruction to 56 students. It should be added that a *Military Veterinary School* at *Paotingfu* in Chihli Province was opened in 1912. The Rockefeller Commission whose members were very favourably impressed with its work, stated that 72 students were attending the second and third classes. The director was a graduate of the Peiyang Medical School and in addition, there were four Chinese instructors trained in Japan and two Japanese.

The private *Nantung University Medical School* at *Nantung* (Kiangsu) was founded in 1911. It had in 1934 a teaching staff of 14 (8 full time) and 178 students; the curriculum was 6 years. A total of 216 graduates was reported at the same time, half of whom served in the army (1125).

The beginnings of the *Hunan-Yale College of Medicine* at *Changsha* (called later the *Hsiang-Ya Medical College*) go back to the year 1913, when an agreement was drawn up between the Hunan Yü Ch'ün Educational Association (湖南育羣學會), a body composed mainly of Hunan gentry having the support of the Provincial Government, and the Yale Mission. Immediately after this had been concluded, work was started with a class of pre-medical students. In 1914 a somewhat changed agreement for ten years was ratified. Its purpose was:—

- I. To maintain in Changsha a hospital as well as one or more out-patients dispensaries;
- II. To maintain a medical school;
- III. To maintain a nursing school and in connection therewith an obstetrical department;
- IV. To maintain a laboratory for investigation into the cause of diseases.

Under this arrangement both parties (each with ten representatives on the Board of Managers) assumed almost equal obligations. The Chinese were to erect buildings for the Medical College and Nursing School and to supply the money necessary for current expenses (not to exceed \$50,000 annually). The Yale Mission on the other hand was to erect the hospital and to provide salaries and expenses for 15 teachers (physicians and nurses graduated from Western Universities). A spacious Chinese building was given by the

(1125) Report of the Rockefeller Commission, pp. 9-16; Young, *Journal of Race Development*, July 1913, p. 52; *China Med. Jl.*, 1919, p. 615; *Customs Decenn. Rep.*, 4th Issue, Vol. II, p. 98; 1930 *Directory of the Nat. Med. Assoc.*, *Med. Institutions*, pp. 7, 13; *Chin. Med. Jl.*, 1935, pp. 1005, 1015.

Government for the Medical School and the original hospital (opened in 1908) was moved thither. Here female patients were seen and women nurses instructed, while men were treated and male nurses received their training in the Red Cross Hospital of the city.

In the year 1915, when the Association was registered with the Central Government at Peking, property was bought in a choice location outside the city near the College of Yale-in-China property. On October 18, 1915, the corner-stone of the new hospital was laid by Professor William H. Welch in the presence of the Military Governor, Professor Flexner and Mr. Greene of the Rockefeller Commission.

The first class of medical students, eleven men, was begun in 1916. The course was one of five years with teaching in *English*. Dr. E. H. Hume was the Dean of the School, Dr. F. C. Yen its principal.

In 1918 the new hospital, a modern fireproof structure with accommodation for 120 beds but capable of expansion to double the capacity, was opened. All clinical work as well as the training of nurses, both male and female, was transferred to the new plant. In the year following (1919), the first unit of College buildings was erected, which furnished teaching facilities as well as temporary lodging for the students and male nurses. In 1920 a \$50,000 Science building, a gift of the China Medical Board, was erected for the College of Yale-in-China which made it possible to transfer the pre-medical work to that institution.

The first class graduated in spring 1921, degrees of M.D. being conferred upon the eleven candidates under a charter from the State of Connecticut. The staff at this time was composed of:—

J. R. B. Branch	Gynecology, Obstetrics and Surgery;
H. P. Chu	Pathology, Bacteriology and Physiol. Chem.;
A. S. Crawford (Acting Dean)	Surgery, Roentgenology, Otology, etc.;
J. H. Foster	Medicine, Pharmacology;
Helen Gage	Pediatrics;
Geo. Hadden	Physiology, Medical Jurisprudence;
Geo. K. How, Ph. G.	Pharmacy, Materia Medica;
E. H. Hume (Dean)	On furlough;
T. C. Lieu	Anatomy, Embryology;
T. L. Li	Urology, Dermatology;
Ed. Y. Kau	Orthopedic Surgery, Histology, Surgic. Anat.;
G. S. Shibley	Medicine, Nervous and Mental Dis., Therapeut.;
F. C. Yen (Principal)	Ophthalmology, Hygiene and Preventive Medicine.

42 students were in attendance. The pre-medical class of 29 was taught in the adjacent College of Yale-in-China by Messrs. R. W. Powell (Physics), J. W. Williams (Biology) and Z. Z. Zee (Chemistry).

In 1925 the agreement was renewed for a second period of ten years. In the new contract, the Yale Mission withdrew entirely from

the administrative control of the institution, this being taken over by the Chinese board consisting of 16 citizens of Hunan and four members from other provinces. A majority of the teachers (13 as against 11) was now Chinese. Forty-three students had graduated up to 1926 of whom not less than 41 were engaged in hospital work, the two remaining in public health work; 9 of them worked in the Hsiang-Ya College, 13 in the Union Medical College.

Unfortunately, this useful work came to a standstill during the political troubles of 1927. However, the pupils of the senior class were enabled to complete their studies at the Peking Union Medical College. In 1929 it became possible to begin again with pre-medical work and since then the school has once more been growing steadily. At the request of the Ministry of Education the medical course was adjusted to six years, with abolition of the special premedical course. In 1934-35 there were in attendance 109 medical students, 98 pupils in the nursing classes and 18 in the technical course. 11 students graduated in 1935 (1126).

In contemplating the history of the *Union Medical College at Peking* during the period now under review, we must discuss (a) the continuation of the work along the lines described in the previous chapter; (b) the taking over of the institution by the China Medical Board of the Rockefeller Foundation.

The 1910-11 Report of the Union Medical College (1127) shows that 103 students were in attendance and that—while some members of the staff were on furlough for shorter or longer periods—a valuable change was the transfer of Dr. J. G. Cormack from Central China to the College. Sixteen students were examined in the presence of officials of the Imperial Board of Education by the International Examining Board, who reported that

.....in the final examination the results of the written papers and the oral tests showed a standard not lower than that attained by the average European graduate, and the Board thinks that the College authorities have every reason to be congratulated on the class of medical men it has contributed to the profession.

The solemn graduation of the candidates took place on April 7, 1911. Grand Councillor Na T'ung, who had represented the Throne at the inauguration of the College, again assisted in addressing the graduates and presenting them with their diplomas, given by the Board of Education and stamped with its purple seal. Appropriate speeches were made first by Sir John Jordan, the British Minister,

(1126) China Med. Jl., 1915, p. 61, 1916, p. 53, 1921, p. 114, F. C. Yen, 1926, p. 748, 1927, p. 668; Nat. Med. Jl., 1929, p. 506; Customs Decenn. Rep., 4th Issue, Vol. I, p. 285; 1930 Directory of the Nat. Med. Assoc., Med. Institutions, p. 12; Chin. Med. Jl., 1935, p. 1010.

(1127) China Med. Jl., 1911, p. 254.

who presided, then by the Grand Councillor, followed by Dr. Thomas Cochrane (Dean), the American Minister Hon. J. W. Calhoun and Dr. W. A. P. Martin. The speech of Councillor Na T'ung was translated by Dr. W. W. Yen of the Wei Wu Pu(1128).

In order to induce the graduates to go in for further hospital training, a higher diploma was offered to be secured as a result of practical work and further examination(1127).

A report published in September, 1911, (1129) stated that the addition of a preparatory year to the five years' course had become necessary in order to enable students to pass the entrance examination. The 25 students in this were at first taught by senior pupils, but hopes were entertained that in the year following, Dr. Hill and Mr. Read would be in charge of the instruction in physics and chemistry respectively. Excellent provision was made for thorough training of the medical students. English classes were made compulsory for all so as to enable the students to read English medical books and papers. At the same time Chinese classes were held for those pupils who had not been found fully proficient in the language at the entrance examinations.

It is sad to relate that the College lost within the next few years three valuable members of its staff, first Dr. F. J. Hall (in China since 1906) who contracted typhus while ministering to patients, dying on May 26, 1916; then H. V. Wenham, F.R.C.S., who succumbed after about eight years' devoted work in November, 1914, to septic pneumonia and Dr. J. G. Gibb, F.R.C.S., who died soon after(1130).

The Rockefeller Commission reported that the College, while possessing no charter, was recognised by the Board of Education. The property, valued at Gold \$131,900, consisted of five buildings, one for college work, a dormitory, a hospital for men with 60 beds, another for women with 30 beds and an out-patients department. The total expenditure for the year ending June 30, 1913, was Gold \$46,988, the income Gold \$48,059, of which about \$30,000 came from the six missionary organizations forming the Union and about \$7,000 from the Chinese Government for services rendered.

The staff consisted of fourteen medical men giving full time to school and hospital, besides lecturers and assistants. There were 95 students in the College and 43 doing preparatory work. Graduates totalled up to then 38.

Turning to the new era of the College, it must first be mentioned that in 1913 Mr. Charles Eliot, President Emeritus of Harvard

(1128) Ibidem, p. 250.

(1129) Ibidem, p. 319.

(1130) Ibidem, 1914, p. 48, 1926, p. 533.

University, visited China on behalf of the Carnegie Peace Foundation, and in his report dealt adversely with the sanitary conditions to be found there. In January, 1914 the *Rockefeller Foundation* decided to establish a *Commission* to study and report on conditions of public health and medicine in China. This, consisting of Harry Pratt Judson (LL. D. and President of Chicago University), Roger Sherman Greene (U.S. Consul at Hankow), and Francis Weld Peabody, M.D. (Harvard University and the Peter Bent Brigham Hospital in Boston) arrived in April. They visited the principal centres of medical activity, leaving Shanghai in August. Altogether seventeen medical schools and ninety-seven hospitals in China and Manila were seen. The Commission published in the same year a most valuable *Report* (reprinted in May, 1915) which contained authentic and excellently arranged material on the subject.

The Rockefeller Foundation adopted in principle the recommendations made by its Commission and resolved on November 30, 1914, to establish a *China Medical Board*. At a meeting of this on December 11, 1914, the following officers were appointed:—

Chairman, John D. Rockefeller, Jr.;

Director, Wallace Buttrick;

Resident Director in China, Roger S. Greene;

Secretary, E. C. Sage;

Executive Committee: Wallace Buttrick, Frederick T. Gates, Jerome D. Greene, Starr J. Murphy, Francis W. Peabody, John D. Rockefeller, Jr. (1131).

The first important task of the Board was the *acquisition of the property of the Union Medical College in Peking*, which was completed on June 2, 1915. The terms of transfer provided that the work of the College should be conducted by a *Board of Trustees*, which should consist of thirteen members, one to be appointed by each of the six missionary organizations heretofore maintaining the College, and seven by the China Medical Board.

On July 1, 1915, the China Medical Board assumed *full support* of the College, with an annual budget of G\$53,000 (1132).

In May of the same year the Board requested Drs. Welch and Flexner together with Mr. Gates (who was retained in America at the last moment) to visit China and report a definite program for the reorganization of the College and also to consider whether the Board might not organize a second school at Shanghai. This *second com-*

(1131) Mr. J. D. Greene resigned in May, 1915 and Mr. Gates was appointed Vice-Chairman at the same time.

(1132) As Mr. Roger S. Greene kindly informed us (May 29, 1930) the total operating expenses for the last year before that time were about \$ mex. 100,000, about one third of this sum being salaries and allowances paid by the six missions to their foreign staff.

mission sailed early in August and returned at the close of the year, visiting in the meantime numerous cities in China and a few in Japan and Korea.

We have already shown how the plans in regard to the medical school at Shanghai did not materialize. On the other hand, the China Medical Board rendered aid to medical institutions in China, apart from taking care of the Peking College. Thus in 1914 the Board contributed \$16,200 a year for five years to the Hunan-Yale Medical School at *Changsha*. Aid was also given to various missionary hospitals in China before the second commission sailed in August, 1915. Further, a limited number of *fellowships* in the United States was granted to Chinese graduates, nurses and pharmacists. The first of these were awarded to

Drs. Tsing-meu Li,	Hunan-Yale Medical School, Changsha;
Tsing-lian Li,	Hunan-Yale Medical School, Changsha;
E. T. Hsieh,	Peking Union Medical College;
Sze-jen Shen,	Harvard Medical School, Shanghai;
Mary Stone,	Kiukiang Hospital;
Tsung-hsien Tsen,	Harvard Medical School, Shanghai;
Ching (Peter) Kiang,	Pennsylvania University, Philadelphia.
Nurses Lillian Wu,	Under Dr. Mary Stone;
Mildred Wu,	Yale Mission Hospital, Changsha.
Pharmacists Tshung-yi Ch'eng,	Peking;
Yin-dah Hsi,	Changsha;
Kyan-tsing How,	Changsha.

Fellowships were likewise granted to few medical missionaries to enable them to pursue graduate work while on furlough.

Since it was proposed to make a new beginning at Peking with teaching in the *English* language, the Trustees decided at their first meeting on January 24, 1916, that no new students should be admitted to the institution in autumn, 1916, and that the 60 odd pupils of the first, second and preparatory classes should be transferred under Dr. E. R. Wheeler to the Union Medical College at *Tsinanfu* to complete their studies, while the two upper classes would finish at Peking. In furtherance of this plan \$50,000 were appropriated to the *Tsinanfu* school for buildings and equipment and a further sum of \$100,000 towards the cost of maintenance for the next five years.

At the first annual meeting of the Trustees on May 23, 1916, organization was effected under a provisional charter granted by the Regents of New York State University. In June, 1916, Dr. Franklin C. McLean of the Rockefeller Institute Hospital was elected Professor of Medicine and Physician-in-Chief. He visited China and made a careful study of the situation there, returning in October to the United States.

The property of the College was enlarged during the year and plans were begun for the erection of new buildings.

The Board continued to assist missionary hospitals and doctors on furlough. The scholarships granted to Chinese doctors were prolonged for a second year, except in the case of Li Tsing-meu, who took up work in the College. New fellowships were awarded to Dr. F. C. Yen (Changsha) and George Y. Char of the Church General Hospital, Wuchang, while a new nurse added to the list was Miss Elizabeth Li-sing Sze of Soochow.

On September 24, 1917, the corner-stone of the new buildings was laid by Mr. Fan Yuan-lien, Minister of Education, addresses being made by Lieut.-Col. Frank Billings, M.D., of Chicago, U.S. Minister Dr. Paul S. Reinsch and Director McLean. A number of members for the staff of the future medical school was appointed during the year, comprising Drs. Young, Smyly, Korns, and Mr. Read, Ph. C., M.S., all employed formerly at the College.

In September, 1917, the *Pre-medical School* was opened, housed in the remodelled buildings of the former Union Medical College. Eight students were enrolled for a three-year course, all of whom were required to possess on entering a working knowledge of English. The curriculum comprised English, Chinese, German, mathematics, physics, chemistry and biology.

The staffing of the College was continued during 1918, a number of the Faculty members spending the year in the United States in post-graduate work and research.

In autumn of 1919 the *medical school* of the College was installed in three completed new buildings—anatomy, physiology, and chemistry. Seven students were registered (most of them from the Peking Pre-medical School) besides 19 Chinese graduates who carried on specialized programs under the direction of departmental heads. At the end of 1919 the staff comprised the following:—

Franklin C. McLean,	Director, and head of Dept. of Medicine;
H. S. Houghton,	Acting director;
A. M. Dunlap,	Assoc. professor otology, rhinology, laryngology and Dean;
E. V. Cowdry,	Professor of anatomy;
R. G. Mills,	" of pathology;
A. S. Taylor,	" of surgery;
H. J. Howard,	" of ophthalmology;
J. Preston Maxwell,	" of obstetrics and gynaecology;
Davidson Black,	" of embryology and neurology;
Bernard E. Read,	Assoc. professor of physiological chemistry;
O. H. Robertson,	" " of medicine;
A. H. Woods,	" of neurology and psychiatry;

H. C. Embrey,	Associate in physiological chemistry;
E. C. Faust,	" in parasitology;
En-tseng Hsieh,	" in pathology;
Edgar T. H. Tsen,	" in pathology;
J. H. Korns,	" in medicine;
W. G. Lennox,	" in medicine;
H. J. Smyly,	" in medicine;
C. W. Young,	" in medicine;
F. E. Dilley,	" in surgery;
Jui-heng Liu,	" in surgery;
Way-sung New,	" in surgery;
Tsing-meu Li,	" in ophthalmology;
P. C. Hodges,	" in roentgenology;
R. S. Stone,	Assistant in Anatomy;
S. Y. Wong,	" in physiological chemistry;
Geo. Y. Char,	" in surgery;
Arthur Waitah Woo,	" in obstetrics and gynaecology;
Jui-hua Liu,	" in otology, rhinology and laryngology.

The further activities of the Peking Union Medical College will be described in the following chapter (1133). To conclude the present survey of educational activities in Peking, it is interesting to note that a dental department was added in 1917 to the Hopkins Memorial Hospital of the Methodists and for several years in connection with it a *Dental Training School* was conducted which trained about a dozen men who, after graduation, mostly worked in hospitals (1134).

Though much data regarding the Union Medical College at *Tsinanfu* has already been recorded it is as well to summarize its history during this period. The formal opening of the school took place on April 17, 1911, i.e. about a year after regular class work had begun (March, 1910). The main building of the new college was an imposing three-story structure, containing class rooms, laboratories, and an operating amphitheatre.

The Governor, Sun Pao-chi, personally assisted at the opening ceremony and showed his appreciation by a personal gift of Tls.1,000.

The first graduation of the school took place in June, 1914, when degrees were conferred upon seven of the 46 students enrolled during 1913-14. The next year, a modern hospital with accommodation for 115 patients was finished as well as an out-patients department in a separate block.

(1133) The above information has been culled mainly from the Annual Reports of the China Medical Board, 1915-1920.—See also Nat. Med. Jl., 1918, p. 175 and Carter, China Med. Jl., 1926, p. 726.

(1134) 1930 Directory of the Nat. Med. Assoc., Peiping, p. 35.

As already stated the China Medical Board wishing to make the Tsinanfu college (which had been reorganised as the *School of Medicine of Shantung Christian University*) a strong centre with instruction in Chinese, entrusted three classes to it and, at the same time made a liberal grant of \$ mex. 150,000 towards its expenses. To this the Board later on added \$ mex. 50,000 to make up for loss in exchange. We have also mentioned how in 1917 the Medical Department of Nanking University joined forces with the Tsinanfu School, followed one year later (1918) by the Hankow Medical School, and in 1923-24 by the Peking Union Medical College for Women (1135).

The history of the medical school at *Chengtu* (*West China Union University Medical College*) is closely connected with that of the University, which was first projected in 1904 and opened in 1910 under the auspices of the American Baptist Foreign Mission Society, Friends' Foreign Mission Association (English), General Board of Missions of the Methodist Church, Canada, and Board of Foreign Missions of the Methodist Episcopal Church, U.S. America. In 1911 a hospital of the Canadian Methodists was opened, which was afterwards used for teaching purposes.

The Medical Faculty of the University began its work in autumn of 1914 with a class of seven students and a staff consisting of Drs. H. L. Canright (Methodist Episc. Mission, Chairman of Faculty), H. L. Irwin (Methodist Episc. Mission), O. L. Kilborn (Canadian Methodist Mission), C. W. Service (Canadian Meth. Mission) and W. R. Morse (American Baptist Mission, Secretary of Faculty).

A course of six years was adopted in order to teach the students as much English as possible. In fact it was planned to use Chinese as a teaching medium for the first three years (adopting as far as possible English terminology) and then to give part, if not the whole, of the instruction in English.

In 1919 the first class of five students graduated and was given the degree of M.B. In 1920 twenty-one students were in attendance, the 13 most advanced in the fourth class (no new classes having been received for three years). The curriculum had been lengthened to seven years—including two pre-medical ones, during which the students were taught in the faculties of Art and Science. In the medical course proper, the staff consisted of five full-time men—Drs. Morse (Dean), Canright, Elliott, Liljestrand and Wilford—and three part-time—Drs. Allan, Kelly and Mr. E. N. Meuser, Phm. B.

Pending the erection of a special building, the school was temporarily housed in the University Administration building, while the

(1135) Chalfant, *China Med. Jl.*, 1911, p. 316; Shields, *ibidem*, 1926, p. 759; Meleney, *ibidem*, p. 1195; Report of the Rockefeller Commission, p. 22.

anatomical department had a modest block of its own erected in 1915. Clinical teaching was given in the Canadian Methodist Mission hospitals, and it was hoped that use might also be made of the establishment of the Methodist Episcopal Mission, which had been closed for some years because of the scarcity of doctors, but was just being reopened under Dr. Freeman.

Since 1920, a complete course in *Dentistry* had been offered with a curriculum similar to that of the medical school. Connected with the hospital for men was a *School of Pharmacy* under Mr. Meuser. Its first graduates, Messrs. S. Y. Pu and K. C. Chi, served with distinction on the hospital staff (1136).

The *Hangchow* Medical School, which by 1914 possessed fifty-six students and five foreign medical men on the staff, received in 1918 the recognition of the Board of Education. A *Pharmacy* Training School with a curriculum of three years was added during this decade (1137).

Turning to the endeavours made to train *nurses*, mention may first be made of the work started in 1911 in connection with the *Kung Yee* Hospital at *Canton*. This school, opened as soon as the hospital on the Bund began to operate was from the beginning under Mrs. Margaret S. Todd, R. N. It was registered by the Nurses' Association of China in 1918. The total number of graduates up to 1925 was 37, 17 of whom had obtained the N. A. C. diploma.

Systematic training of both male and female nurses was started in the *Canton Missionary Hospital* in 1912, greatly helped by Mr. and Mrs. Louis Schwab of New York, who undertook the support of a foreign nurse in the person of Miss E. M. Manful. In 1915 the American Baptist Missionary Society transferred Miss L. A. Withers from Swatow to Canton to assume the position of Superintendent of the Training School. Cadbury and Jones, dealing with the further history of this undertaking, state that school work for the nurses came to an end when the hospital was temporarily closed in 1926, but was resumed in 1933 (1138).

A Maternity Training School was started in connection with the Marion Barclay Hospital at *Kongmoon* (江門—Kwangtung) and opened its doors in 1912 under Drs. John A. McDonald and Jessie

(1136) Morse, *China Med. Jl.*, 1915, p. 344, Elliott, *ibidem*, 1920, p. 646, Wilford, *ibidem*, 1924, p. 757, *ibidem*, p. 762, Morse, *ibidem*, 1926, p. 763, *ibidem*, 1930, p. 495.

(1137) Rep. of the Rockefeller Commission, p. 24; Sturton, *China Med. Jl.*, 1926, p. 772; Kingston De Gruche, *l.c.*, Chapter VII.

(1138) The History of *Kung Yee* (1925), p. 26; *Canton Hosp. Rep.* 1916, p. 77; Cadbury and Jones, *l.c.*, p. 185.

MacBean, assisted by two Chinese physicians. Twelve pupils entered the original class(1139).

In the year 1913 a School of Nursing was associated with the *Soochow* Hospital where, however, some training had been given since 1909 to male nurses, in which the superintendent from the Women's hospital had taken part. In 1913 Miss Forman was added to the staff and the training of male nurses was continued until 1920. With the opening of new hospital buildings in 1922 a school for female nurses was started, the first class passing the N.A.C. examinations in 1925 after 3½ years training. Through affiliation with the Margaret Williamson Hospital in Shanghai, it was possible to give the pupils obstetrical training for two months. The graduates were employed in the wards for men as well as women with increasingly satisfactory results(1140).

A school for nurses was organized at *Changsha* simultaneously with the pre-medical class in 1913. From a report published in 1921 (1141) we find that it had a course of four years and trained both men and women; twenty pupils had already graduated.

Training of nurses for both sexes was also commenced at *Chengtu* about the year 1913 and carried on with the co-operation of foreign nurses. Male nurses were trained in the Canadian Methodist Hospital for men, female ones in the adjacent hospital for women and children run by the Women's Board of the Mission(1142).

A training class for young women wishing to learn nursing was affiliated with the Harvard Medical School of China at *Shanghai*. It commenced regular work in October, 1914, with a class of four. A curriculum of three years was adopted(1143).

Instruction of male and female nurses was started as soon as the fine Temple Hill Hospital of the American Presbyterian Mission was opened at *Chefoo* in 1914 under Dr. Oscar F. Hills. The training school was up to the end of December, 1915, under Miss Adelaide Primrose; then Miss A. R. Watson took charge. Among the teachers, besides Dr. Hills were Dr. Djang Shu-giang, who had worked for many years at the Chefoo station, and Dr. Chen Hsioh-ling(1144).

A foreign nurse was installed at the Hopkins Memorial Hospital in *Peking* in the year 1915, and under her charge a training school

(1139) Customs Decenn. Rep., 4th Issue, Vol. II, p. 267.

(1140) Reports of the Methodist Episcopal Hospital Soochow, *passim*.

(1141) China Med. Jl., 1921, pp. 114, 118-119.

(1142) Ibidem, 1924, pp. 760, 763.

(1143) Fifth Annual Report of Executive Committee, Harvard Medical School (1915), p. 10.

(1144) Reports of the Temple Hill Hospital, *passim*.

for men was established which in due course was recognised by the National Association of Nurses of China(1145).

The *Peking Union Medical College School of Nurses* was opened on September 28, 1920, with a class of three young women, one of whom completed the course and graduated in 1924. At the same time, two classes for *male* nurses who had been admitted to the old hospital were continued, the last graduating in 1923. No new men were admitted, however, to the nursing school, which had on the original staff Superintendent of Nurses Anne Dryden Wolf, Instructor Mary L. Beaty and Asst. Supervisor Ruth Ingram (who became Superintendent and Dean of the School in July, 1926).

Up to 1929 the school had graduated a total of six classes and twenty-three pupils. In 1929-30 instruction was in the hands of the Dean, one instructor and two assistants, besides whom five teaching supervisors and eight members of the Medical Faculty were employed. Two courses are now offered: (a) One covering a period of four years, including one pre-nursing year at Yenching University, and leading to Diploma in Nursing; (b) One covering five years and leading to the Bachelor of Science degree from Yenching University in addition to the Diploma. The first two years are spent at the University, the rest of the curriculum in the school and partly also in field work in the Health Demonstration Area(1146).

A training school for nurses was installed in connection with the University Hospital at *Tsinanfu* in 1915. Here a three years' course was given to both men and women(1147).

The *Nanking University Hospital* started the systematic training of male nurses in October, 1918, when a class of seventeen was enrolled according to the curriculum of the Nurses' Association of China(1148).

Training schools for both men and women were also opened during this period in connection with Dr. Main's work at *Hangchow*. A three years' course was given. Instruction for women mainly lay in the hands of Miss Morris and Miss Queenie Tsay.

The hospital of the American Presbyterian Mission (South) at *Kashing* also had a nurses' training school with an average attendance of 25 students. The same was the case with the United Evangelical Mission Hospital opened at *Liling* (醴陵—Hunan) in 1916 staffed by Drs. Niebel, Chen Peng and Tsao and Miss M. K. Wolf and two

(1145) 1930 Directory of the Nation. Med. Assoc., Peiping, p. 34.

(1146) Ibidem, p. 19; W. S. Carter, *China Med. Jl.*, 1926, p. 741; Annual Rep. of the China Medical Board, 1920, pp. 13, 23, 1922, p. 32, 1926, p. 7.

(1147) Educational Directory and Year Book of China, 1920, p. 62.

(1148) *China Med. Jl.*, 1919, p. 596.

Chinese in the Nursing Department. The work at *Changchow* will be discussed in a subsequent paragraph (1149).

In previous chapters we have repeatedly pointed out that one of the main difficulties confronting the publication of *Chinese medical books* was the lack of a uniform *terminology*, but we have also been careful to do justice to the attempts of the China Medical Missionary Association to remedy this situation. We have seen how their efforts culminated in the publication of a "Medical Lexicon" in 1908. However, while this was accepted by most Mission schools, neither the Chinese Government nor the independent modern-trained Chinese physicians took kindly to it, mainly because many new characters were manufactured and several translations were too arbitrary. Great interest was taken in the matter by the Japanese returned students, who concentrated their efforts upon anatomical terms, but the designations chosen by them were often mere phonetic transliterations of western words, conveying no sense or meaning to the student.

The problem was certainly a complicated one. As the late Dr. C. Voonping Yui pointed out in 1916, three guiding principles, as propounded by the author Yen Fu (嚴復) had to be borne in mind, viz:—(1) Exact representation (信); (2) Lucid expression (達); (3) Refined diction (雅). Newly introduced or specially constructed phrases might be acceptable, but obsolete words and coined characters would not meet with general approval. Dr. C. V. Yui likewise pointed out the great difficulties met by Western medical men, however erudite, in translation. They had in several ways to rely upon their assistants (often non-medical) who were not up to the high standard required for original work of this kind. Dr. C. V. Yui therefore considered that the newly-founded National Medical Association should make every endeavour to share in the task.

The need for co-operation was clearly recognised in other quarters as well. The Kiangsu Educational Association at a special meeting held in January, 1916, expressed their admiration of the painstaking work of Dr. Cousland and his collaborators but decided that the work of other translators should be compared before the terms were finally adopted. The China Medical Missionary Association during the 1915 Conference expressed the wish for joint work with representatives of the Board of Education.

An important decision was reached when a *Conference on Chinese Terminology* was held at Shanghai between August 5 and 12, 1916. The following delegates took part:—

(1149) Kingston de Gruche, l.c., Chapter VII; Customs Decenn. Reports, 4th Issue, Vol. II, p. 97; China Med. Jl., 1920, pp. 673-674.

<i>Medical Missionary Association:</i>	Drs. J. B. Neal, R. T. Shields, P. L. McAll, J. G. Cormack;
<i>National Medical Association:</i>	Drs. K. Chow, Jui-heng Liu, N. Abel Tang, P. C. Wong, C. Voonping Yui;
<i>Medical and Pharmaceutical Association:</i>	Drs. Wong Zeh-nien, Sah Sze-chieh, Wong Tsung-mei, Li Ting, Fan Shao-ko, Peng Shu-tze, Sheng Tsai-hang, Hua Hung, Chao Yao-nung;
<i>Kiangsu Educational Association:</i>	Messrs. Wong Jen Tze, David Z. T. Yui, Sung Hsin-ching, Woo Ho-sze, Chiang Chi-ho;
<i>Board of Education:</i>	Dr. Tang Er-ho.

Mr. David Z. T. Yui was in the chair. Another interesting representative of the Kiangsu Educational Association was Mr. Sung Hsin-ching, who—while knowing neither English nor anatomy—was so prominent a Chinese scholar that he was often called upon to choose between various terms proposed.

The Conference deliberated upon a draft of anatomical, especially osteological, terms introduced by the Medical and Pharmaceutical Association. A corrected version of this was printed and circulated among all medical men in China for further criticism and modification. Should no criticism be received within three months, the terms would be considered as generally accepted. The cost of printing was borne equally by the three medical associations, the Kiangsu Educational Association being exempt. Arrangements for further work on anatomy (osteology excepted) and inorganic chemistry were made.

The Medical Terminology Association thus formed was officially recognised by a rescript of the Ministry of Education on August 27, 1917. In January of that year a second conference was held at Shanghai when Dr. Tang Er-ho again represented the Board of Education while, in addition to delegates from associations formerly taking part in the work, the Kiangsu Chemical Society sent three of its members. Separate meetings were held for anatomy (with Mr. David Yui in the chair) and for chemistry (under Mr. Woo Ho-sze of the Kiangsu Educational Association). The anatomists were able to finish all the terms pertaining to Syndesmology, Myology and Splanchnology. The section on Chemistry adopted the names of elements, some general terms and made a start on chemical compounds.

At a final joint meeting it was decided to have an *Executive* of the General Committee on Medical Terminology established in Shanghai with Mr. David Yui as Chairman, and Drs. R. C. Beebe, C. Voonping Yui and Wong Tsung-mei, Messrs. Sung Hsin-ching and Woo Ho-sze. A third Conference was to be held in August, 1917. This actually took place devoting its attention mainly to anatomical terms.

The fourth conference took place in Shanghai, July 5-20, 1918. Messrs. Tang Er-ho, Yen Chih-chung and Shen Bu-chow attended on behalf of the Ministry of Education. Besides the societies formerly sharing in the work, the Chung Hua Natural Science Association sent delegates. Mr. Shen En-fu was elected chairman in place of Mr. David Yui, now in Yunnan. He reported that a grant of Mex. \$400 per month had been made by the Ministry of Education for the work and that the second report on anatomy and the first on chemistry were ready for submission to that Board. The meeting was divided into three sections—Anatomical, Bacteriological and Chemical.

The anatomical section under the Chairman soon finished its duties, as the most difficult terms had been studied at the last meeting. The bacteriological section made little headway as the author of the list submitted could not attend and few other delegates were present. It was decided therefore that a sub-committee be appointed to prepare the material for further study. The chemical section finished the study on inorganic compounds. The work on organic chemistry was so difficult to solve that it also was referred to a sub-committee for further deliberation. Drs. Tang Er-ho and Shields were elected to prepare the manuscripts for histology.

A fifth conference was held at Shanghai from July 5 to 12, 1919. 600 bacteriological, 1,000 histological (and embryological), and 200 chemical terms were discussed, bringing the total of those determined to about 9,000.

A report published in 1920 stated that the bacteriological terms had been accepted by the Ministry of Education, as those on Anatomy, Chemistry and Physics had previously been. The welcome announcement was also made that the China Medical Board had donated \$500 annually for five years to further the work(1150).

A most valuable *medical book* appearing during this period was Dr. G. A. Stuart's (Nanking) "Chinese Materia Medica: Vegetable Kingdom," mainly culled from the historic *Pents'ao* (Great Herbal, see Book One). It was Dr. Stuart's intention to deal also with the other parts of the Chinese Pharmacopoeia, but his useful life was soon cut short after he had completed the first part of his *magnum opus* in 1911(1151).

Most noteworthy also is the work "The Diseases of China (including Formosa and Korea)" by Drs. W. Hamilton Jefferys and

(1150) Voonping Yui, Nat. Med. Jl., 1916, No. 2, p. 20; ibidem, No. 3, p. 24, 1917, pp. 62, 157, 1918, p. 113, 1919, p. 173, 1920, p. 147; China Med. Jl., 1915, p. 102, 1916, p. 205, 1920, p. 183.

(1151) Balme, l.c., p. 163; China Med. Jl., 1911, p. 332.—A comprehensive *List of Chinese Medicines* (including 1,575 varieties) prepared by Mr. F. A. Morgan was published by the Maritime Customs in 1889.

James L. Maxwell (Philadelphia, 1911) which gave an excellent survey of the nosology of the country and, at the same time, gave sound advice on how to deal with diseases and practice of medicine in general.

As will be gathered from the subjoined list, numerous translations were published or re-edited by the China Medical Missionary Association which in 1916 received an annual grant of \$4,500 from the China Medical Board for this work:

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|----------|--|---|
| 1911-13. | Essentials of Anatomy,
Heath's Practical Anatomy,
Osler's Medicine,
Fuchs' Ophthalmology,
Skin Diseases, 4th Ed.,
Caird and Cathcart's Surgery,
Roy's Pharmacy, | Atlas of Anatomy,
Eye Diseases, 5th Ed.,
Evans' Obstetrics,
Halliburton's Physiology, 5th Ed.,
Rose and Carless' Surgery,
Hare's Therapeutics, 2nd Ed.,
Stengel's Pathology, Part I (1152). |
| 1913-14. | Griffin's Medical Jurisprudence,
Younger's Insanity in Every-day Practice,
Bruce and Dilling's <i>Materia Medica</i> , Vol. 1,
Thorington's Refraction,
Gray's Anatomy, 2nd Ed., | Archinard's Bacteriology, 2nd Ed.,
Luff's Chemistry, 3rd Ed.,
Penrose's Diseases of Women, 2nd Ed.,
Halliburton's Physiology, 6th Ed.,
Hare's Therapeutics, Reprint. |
| 1915-16. | Bruce's <i>Materia Medica</i> , Vol. 2,
Stengel's Pathology, Vol. 2,
Holt's Diseases of Children, Vol. 1,
On First Aid,
Medical Lexicon (Reprint),
Roller Bandaging (revised),
Hare's Therapeutics (revised), | Essentials of Anatomy (revised),
Hygiene and Public Health,
Holt's Care and Feeding of Infants,
Surgical Nursing (revised),
Toxicology,
Central China Manual of Nursing (revised),
Hutchinson and Rainy's Clinical Methods. |
| | | <i>Translator:</i> |
| 1917-20. | Holt's Diseases of Infancy and Childhood, Vol. 2
Appendix to Medical Lexicon
Lewis and Stoehr's Histology
Notes on Physiological Chemistry
Evans' Obstetrics, 3rd Ed.
Kerr's Practice of Medicine, 3rd Ed., revised by
Medical Lexicon, 3rd Ed.
Diseases of Skin, 5th Ed.
Halliburton's Physiology, 7th Ed.
Fuchs' Ophthalmology, 2nd Ed.
Practical Pharmacy (reprint of part)
Archinard's Bacteriology, 3rd Ed.
Hare's Therapeutics (Reprint)
Osler's Practice of Medicine, 2nd Ed.
Robb's Nursing (Chesnut & Boggs' 3rd Ed.)
revised by | Mary Fulton,
Cousland,
Shields,
Neal,
Niles,
Niles,
Cousland,
Neal,
Cousland,
Neal,
Roya,
Venable,
Ingram,
Cousland.
Mr. Leo Teh-hsing (1153). |

The *Nurses' Association* also received an appropriation of \$700 from the China Medical Board with which it commenced the publication of the following translations and compilations:—

- (1152) Heath's Anatomy was translated by Dr. Cochrane with the assistance of Dr. Hsieh En-tseng (*China Med. Jl.*, 1911, p. 260).
- (1153) *China Med. Jl.*, 1913, p. 84, 1915, p. 101, 1917, p. 156, 1920, p. 184; Annual Report of the China Med. Board, Rockefeller Foundation, 1916, p. 26.

- 1916 Dr. Russell Andrews' Midwifery for Nurses; Additional chapters on abnormal conditions were specially prepared by Dr. Andrews.
Manual on Massage.
- 1917 Bundy's Textbook of Anatomy and Physiology;
Reid's Bacteriology in a Nutshell.
- 1918 Stimson's Drugs and Solutions.
- 1920 Friedenwald's Dietetics for Nurses (1154).

The question of a *medical journal in Chinese* had been discussed at the 1910 Conference of the China Medical Missionary Association and eventually, Dr. Geo. A. Stuart was asked to undertake the editing of the proposed periodical. In January, 1911, he made an appeal for collaboration but owing to his death soon afterwards, no further action could be taken.

In May, 1912, however, a Chinese bi-monthly, called the *Chung Wah Ye Po* (中華醫報—China Medical Journal-Chinese) was published at Canton under Dr. Wm. W. Cadbury. Reporting in July, 1913, upon the completion of the first volume, he stated that among the scientific papers, reports, etc. published, 35 had been contributed by modern-trained Chinese physicians as against 34 from the pen of foreigners. Two of the most notable articles were those by Drs. Lei Shue Fan (Li Shu-fan) and Hoh Ko-tsun on the sanitary administration and government regulations of Kwangtung Province. Dr. Todd reported at the 1913 Conference that the journal had 221 subscribers and might be considered as self-supporting. The publication committee suggested that the Association should take over its financial responsibilities and make it an organ of the Association though still edited at Canton as heretofore.

As Dr. Cadbury kindly informed us, he remained editor of the journal until the latter part of 1915 when he went on furlough and was succeeded by Dr. J. A. Hofmann. The journal continued to appear until 1917 (altogether 32 numbers were published), when "it became evident that the National Medical Association of China was better qualified to publish a Journal in Chinese and so we were glad to relinquish the burden and hand it over to them. The result has fully justified our confidence in them" (1155).

At the 1918 Conference of the Nurses Association in Foochow it was decided to publish a quarterly Newsletter in English, and this was done for two years. In 1919 it was realised that a paper in Chinese for the rapidly growing number of Chinese nurses was a necessity,

(1154) Ibidem, p. 27 and Quarterly Journal for Chinese Nurses, 1927 (Vol. 8, No. 3) p. 20.

(1155) China Med. Jl., 1911, p. 54, 1913, pp. 69-70, 276, 1915, p. 102; Letter from Dr. Cadbury of March 13, 1930.

and Mrs. T. A. Hearn and Miss R. A. Pumphrey were asked to plan such a publication. The first number of this periodical, called in Chinese 中華護士季刊, appeared in January 1920 and simultaneously, the English *Quarterly Journal for Chinese Nurses* was started. The enterprise was self-supporting from the first (1154).

A list of Chinese medical journals which have ceased to exist is herewith appended (1156):—

Name:	Editor:	Date 1st publ.	Remarks:
National Medical Jl. 中華醫報	Dr. W. L. Chia	1912	Bi-monthly.
New Medical Jl. 醫學新報	嘉惠霖 New Med. Association	1913	Monthly.
New Medicinal Jl. 醫藥新報	Mr. Tupin	1913	Monthly.
Kwong Chi Med. Jl. 廣濟醫報	渡邊久作 Kwong Chi Alumni Assoc.	1914	Bi-monthly.
Med. & Pharmac. Jl. 醫藥觀	Dr. K. F. Li	1914	Monthly.
Chkiang Med. College Jl. 浙江醫學院友會雜誌	厲家福 Dr. C. C. Chin	1915	Quarterly.
Kwong Kwa Monthly Medical Jl. 光華醫社月報	錢崇澗 Kwong Wa Med. Assoc.	1915	Monthly (9 numbers appeared).
Republic of China Med. Jl. 中華醫藥學會會報	Med. Assoc. of Republic of China	1917	Yearly.
Hygiene Jl. 衛生	Kwong Wa Med. Assoc.	1918	Bi-monthly.
Tung-chi Jl. 同濟	Dr. S. P. Wong, Tung-chi Med. College, Woosung	1918	Bi-monthly.
Pao-chi 博濟	黃勝白 Pao-chi Missionary Hospital	1919	Monthly.
Weekly Medical Jl. 醫學週刊	Weekly Med. Assoc.	1919	Supplement to the Shih-Pao News Shanghai.
Medical & Pharmac. Jl. 醫藥雜誌	Dr. Ku Chen	1920	Monthly (7 numbers appeared).
Tung Teh Medical Jl. 同德醫藥學報	Dr. S. P. Wong	1920	Monthly (8 numbers appeared).
Medical Review 改造與醫學	黃勝白 Dr. P. L. Yao	1920	Monthly.
Far Eastern Med. Jl. 東亞醫學雜誌	姚伯麟 Dr. Lee An	1920	Monthly.

Turning to *hospital activities* attention must first be drawn to great changes in the *Canton Missionary Hospital*. Dr. A. H. Woods, who had come out some years earlier as physician to the Canton Christ-

(1156) Information procured by Dr. C. S. Lin.

ian College and had rendered valuable services to the hospital as visiting neurologist, was made chairman of the Managing Committee in 1913. He suggested to invite other specialists as visiting members of the staff. This new policy was actually inaugurated in May, 1914 when Dr. Swan left the hospital and the position of medical superintendent was abolished, his duties being delegated to the medical staff. At first this body was thus composed:—

Drs. W. W. Cadbury, Chairman and head of Dept. of Medicine;
J. O. Thomson, head of Surgical Service;
A. H. Woods, Neurologist;
H. J. Howard, head of Eye, Ear, Nose and Throat Dept.;
J. F. Lee, Assistant Pathologist in charge of Laboratory.

Dr. Swan engaged after his retirement in private practice, conducting with marked success a hospital at Tung Shan, Canton. Unfortunately he was accidentally killed while in America in 1919.

As already stated, the Canton Medical Missionary Union was organized in 1916 and the management of the hospital delegated to it, the property being held for the Medical Missionary Society by a Board of Trustees, of which the American and British Consul-Generals were members. The union was originally formed by the Medical Missionary Society, the Women's Board of the American Baptist Mission (North), the American and Reformed Presbyterian Missions; subsequently, the New Zealand Presbyterian Mission and the Canton Christian College also joined. The China Medical Board in 1916 made a grant of \$4,500 per annum for five years to the hospital for the support of a business manager and general maintenance expenses.

A new foundation of the year 1919 was the Pokiwui Hospital, a Japanese institution(1157).

The Amoy Chinese Hospital (濟世館醫), after 75 years of service, went out of existence following its destruction by the typhoon of 1917. In the same year, a military hospital was established to take care of the Northern troops then stationed in the city. It was soon taken over by the local military authorities and continued under the name of the Hung Jen Hospital (宏仁醫院).

In 1918 a Sino-Japanese corporation opened the Amoy Hakuai Hospital (廈門博愛醫院) in Kulangsu with a branch in Amoy. Another foundation of the year 1918, the Hui Ch'un Lu Hospital (回春廬) was run on old-style lines, being staffed by four Chinese practitioners. Financial support for this institution was obtained by subscriptions and by a tax of 10 cents each on emigrants, who received free medical treatment(1158).

(1157) Annual Reports of the Canton Hospital, 1916, p. 70, 1919, p. 118; 1919 Annual Report of the China Med. Board, p. 84; China Med. Jl., 1920, p. 106; Nat. Med. Jl., 1925, p. 366; Cadbury and Jones, l.c., p. 217.

(1158) Customs Decenn. Rep., 4th Issue, Vol. II, p. 164.

At *Ningpo* three Chinese hospitals were established during this period—the Municipal Hospital (甯波市立第一醫院) in 1912, the Kiangtung P'u Jen Hospital (江東普仁醫院) in 1916 and finally, a Red Cross Hospital (紅十字會醫院) in 1918(1159).

In 1913, the Franciscan Missionaries of Mary founded a hospital for Europeans and a dispensary for Chinese in *Shanghai*. In 1918 a Maternity block was added to the Victoria Nursing Home; this has, since 1930, been closed(1160).

At *Peking* the *Dojin Hospital* was opened in 1914 in San Tiao Hutung just to the East of the Union Medical College. It was under the auspices of the Japanese Dojin Association and began as a private institution, but is now subsidized by the Japanese Government to the extent of \$500,000 per annum. The establishment, which is housed in a modern building, possesses accommodation for over 60 patients and is mainly staffed by Japanese physicians with Dr. Ijima as medical superintendent. The number of patients treated during the last years was above 50,000, three-quarters being Chinese.

On the outbreak of the Great War, Dr. E. Dipper was appointed Superintendent of the *German Hospital*, and in 1915 a civil hospital was established to care for the increasing number of Chinese patients who sought treatment under special arrangements with the military hospital.

When China joined the Allies, the military hospital was closed and the whole institution amalgamated with the civil hospital. Dr. Dipper and his colleagues were allowed to carry on their work as heretofore on account of the reputation which the German medical profession had won for itself in the capital.

In 1919 modifications were made in the internal construction of the building in order to provide the patients with the comforts and conveniences of an up-to-date hospital, but it was not until 1923 when the present substantial buildings with a modern polyclinic, located in the Legation Quarter, were completed. In 1928 a block to house infectious cases was added. The hospital, which at present has a capacity of 110 beds, is under Drs. Dipper and P. Krieg.

To proceed in chronological order we must now refer to the foundation in May, 1916, of the *Metropolitan Hospital*, established as a private institution outside of Hsuan Wu Men. In 1918, when China declared war against Germany, it was used to treat the sick among the interned enemy aliens. In 1927 Dr. Shisan C. Fang, the owner of the hospital, commenced the erection of a new plant (Shou Shan—首善醫院) which was formally opened in May, 1929, with accommodation for 30 patients.

(1159) Ibidem, p. 110; 1930 Directory of the Nat. Med. Assoc., Med. Inst., p. 78.

(1160) Latourette, l.c., p. 561; 1930 Directory, Shanghai, p. 71.

The foundation of these institutions, useful as they were in their way, was overshadowed by that of the *Central Hospital*. The history of this purely Chinese but thoroughly modern institution goes back to the year 1915 when Mr. Chou Hsueh-hsi, Minister of Finance under President Yuan Shih-k'ai, desired to establish a sanatorium costing \$100,000 in the Western Hills. Dr. Wu Lien-teh pointed out to him the more urgent need of an up-to-date hospital in the capital, which would serve as a model for both officials and people and thus promote the interests of scientific medicine. The sanatorium could then be built on a smaller scale as an adjunct for convalescents.

As a result a meeting of prominent Peking residents took place in the spring of 1915 at which several Ministers and influential leaders took part. Besides the sum of \$100,000 at the disposal of Mr. Chou, \$110,000 were subscribed at the meeting. A fine plot of government land in the West city, next to the historic Temple of Imperial Ancestors, was presented to the hospital and adjacent property bought. An American firm of architects (Shattuck and Hussey) was engaged to draw up suitable plans, and the building contract given to a German (Hugo Leu). Construction work was begun in June, 1916.

The uncertainties of the political situation considerably hindered the campaign for additional funds, but by the strictest economy and with the generous help of the Government Railways (which charged half rates for all materials conveyed by them); the Customs (which allowed free import) and many private firms (which gave special rebates), it became possible to build and equip a thoroughly efficient ferro-concrete four-hundred-thousand dollar hospital for only \$300,000(1161). The whole undertaking was supervised from beginning to end by Dr. Wu Lien-teh, who himself donated \$2,000. Accommodation was provided for ten first-class, twenty second-class and 120 third-class patients.

The institution was formally opened on January 27, 1918, and continues to exist(1162).

We have already referred to the opening of the Temple Hill Hospital at *Chefoo* by the American Presbyterians in 1914 under Dr. Hills and Robert W. Dunlap. This excellent establishment had accommodation for 100 beds and had within a few years won so high a reputation that though its staff had increased to four foreign and two Chinese doctors, it was not easy to meet all the calls upon it. Foreigners were admitted when necessary(1163).

(1161) A full description of the plant appeared in the *Modern Hospital* (America), April, 1917. See also *National Med. J.*, 1916, No. 4, p. 3.

(1162) *Ibidem*, 1918, p. 40, 1924, p. 274; 1930 *Directory of the Nat. Med. Assoc.*, Peiping, pp. 25, 28, 30, 45.

(1163) *China Med. J.*, 1916, p. 118; *Customs Decenn. Rep.*, 4th Issue, Vol. I, p. 200.

An International Hospital was opened at *Hankow* in 1912. It had been used in an unfinished condition as an Emergency Red Cross Hospital during the fighting in the winter of 1911 just after the Revolution.

The Chung Hsih Hospital, opened in the Chinese city of *Hankow* in October 1920, was a modern three-storey building; it was staffed entirely by Chinese. The Catholic Mission added a large new block to its hospital in *Faucheong Road*(1164).

Dr. Kristian Hannested came to *Kalgan* in 1914 but left, after an interval of language study for *Dolonor* where he spent three and a half years in hospital and dispensary work. He then returned to *Kalgan* where he erected a hospital, carrying on successfully until he succumbed to typhus fever in April, 1926(1165).

At *Hangchow*, the Chekiang Hospital (浙江病院) was opened in 1911 by subscriptions from gentry and merchants and soon won esteem equal to that accorded to Dr. Main's hospitals. A branch was opened in 1919 at *Konzenchiao* (拱宸橋).

A new missionary leper asylum was opened in 1915 on Pine Avenue Hill outside the city. This well-built hospice for men had accommodation for 50 inmates, while female lepers were housed in a temporary refuge with 12 beds until a proper building was erected in 1923. Treatment of lepers on a scientific basis was commenced in 1920.

At this time, a number of smaller Chinese hospitals came into existence in the city, among which may be mentioned, besides the Plague Hospital (時疫醫院) the Hui Min Hospital (惠民醫院), the Chih Chiang Hospital (之江醫院), the Ming 'te Hospital (明德醫院), the Chiang Kan Hospital (江干醫院), and the Wu Lin Hospital (武林醫院). There were also two establishments for the army, namely, the Military Hospital for the 4th Division (浙軍第四師陸軍醫院) and the Chekiang Army Hospital (浙江陸軍醫院)(1166).

In 1919, the gentry of *Wuhu* founded a hospital for women and children which soon proved a success under Chinese management. A dispensary for treating the poor was opened in 1920 by the Sisters of the American Church Mission. The work of the *Wuhu* General Hospital under the Methodist Episcopal Mission was continued and plans were made for the erection of a new up-to-date plant(1167).

(1164) Ibidem, p. 323; *China Med. Jl.*, 1920, p. 701.

(1165) Ibidem, 1926, p. 935.

(1166) Ibidem, 1916, p. 54, 1930 p. 790; *Customs Decenn. Reports*, 3rd Issue, Vol. II, p. 53, 4th Issue, Vol. II, p. 97.

(1167) *Customs Decenn. Rep.*, 4th Issue, Vol. I, p. 355.

A new General Hospital of the American Church Mission was opened at *Wuchang* in December 1918, to replace the formerly separated hospitals for men and women. Its three-storeyed main building, which was fitted with all modern conveniences, was designated to accommodate 200 patients, though the arrangements at the time of opening only permitted the care of 110 (1168).

Quite a number of new hospitals were opened at *Wenchow*. Chronologically, the first (1914) was an establishment of the Catholic Mission with accommodation for about 100 in-patients. Next followed, in 1916, the Hui Ai Hospital (惠愛醫院), a private institution which, however, received some support from the Catholic Mission. Another establishment, opened in 1918 by a former student of the Blyth Hospital, assumed from the surname of its founder Li Hsiao-po (李笑波) the name of "Plum" hospital (伯蘭氏醫院). In 1919, two other institutions, the private Yu Wen Hospital (友文醫院) and the Wenchow Hospital (甌海醫院), managed by the local authorities and staffed by five Chinese doctors, were opened (1169).

Dr. Walter F. Seymour was transferred in 1918 from Tengchow to *Tsining* (濟甯州—Shantung) where he carried on fruitful work until his lamented death in April, 1928 (1170).

It is interesting to note that the Chinese Independent Church, established in 1912 at *Tsinanfu* also had a dispensary besides a church and schools. This was, if not the first, one of the earliest Christian medical undertakings conducted entirely by Chinese.

A large hospital erected at *Tsinanfu* by the Japanese and called the *Tsinan I Yuan* (濟南醫院) was opened in November, 1918. A number of Chinese girls were trained as nurses and several well equipped branch hospitals were maintained along the Shantung Railway, namely at *Tzechwan* (淄川), *Fangtze* (坊子), *Changtien* (張店), *Szefang* (四方) and *Litsun* (李村) (1171).

A public hospital was inaugurated under official auspices at *Kweiyangfu* (貴陽), in November, 1919. Its physician-in-chief, Dr. Teng, had received his medical training in Japan (1172).

The Westminster Sunday School Hospital at *Changteh* (Hunan) with accommodation for 80 patients was completed in 1915. Dr. Logan successfully carried on the work until he was unfortunately shot in

(1168) *China Med. Jl.*, 1919, p. 72.

(1169) *Customs Decenn. Rep.*, 4th Issue, Vol. II, p. 123.

(1170) *China Med. Jl.*, 1928, p. 410.

(1171) *Ibidem*, 1918, p. 608; *Customs Decenn. Rep.*, 4th Issue, Vol. I, pp. 227-228; *Latourette, l.c.*, p. 677.—The 1930 Directory of the Nat. Med. Assoc. also records the foundation of the 廣子安醫院 in 1913 and of the 燕魯婦嬰醫院 for women and children in 1920.

(1172) *China Med. Jl.*, 1920, p. 107.

1919 by an insane officer whom he had been called upon to treat. He was succeeded by Drs. Berst and Tootell(1173).

As Msgr. Gaspais, Bishop of Kirin, kindly informed us the following Catholic undertakings were opened in *Manchuria*: In 1911 a hospice for the aged and a dispensary under the Franciscan Sisters of Mercy at *Changchun*; in 1914 the *Hopital du Bon Pasteur* at Harbin and later on dispensaries of the Swiss Sisters of Bethlehem at *Tsitsikar* (齊齊哈爾) and *Paik-chuan* (拜泉).

At *Kasning*, in the year 1915, the Société Lazariste established a charitable institution for the care of the indigent sick and the distribution of medicines. The Te Hsin Hospital (德心醫院) founded in 1916 by Dr. Chiang Chih-hsin (蔣志新), also deserves mention (1174).

The erection of the new Stout Memorial Hospital at *Wuchow*, planned as a monumental concrete five-storey building, began in 1918 but proceeded slowly so that in 1919 only the basement and part of the first floor were ready for occupancy. The hospital was finished in 1923 possessing then 110 beds(1175).

At *Huchow* the well-equipped General Hospital (吳興福音醫院) was opened under missionary auspices in 1915. The institution which continues to exist is at present under Dr. F. P. Manget (1176).

The St. Paul's Hospital at *Kaifengfu* in Honan was opened in 1915. Destined for women and children, it was under Drs. E. Margaret Phillips and Agnes Tso, a graduate of the Hackett Medical College in Canton. Nurses were trained for the hospital's own needs.

In addition to the main hospital, a Tuberculosis Annex with facilities for open-air treatment and an Isolation block for infectious diseases were maintained. The hospital also had a dispensary in the city and started with a Mothers' Union which held meetings once a month to discuss the care of babies as well as home hygiene (1177).

A British medical man was stationed by the Church Missionary Society at *Yunnanfu* in 1915 and at the close of 1920 the Society completed a dispensary building, part of which was used temporarily to house patients.

Besides the French Consular hospital already described, there was a Chinese Red Cross Hospital under several Chinese doctors, some of whom were modern-trained. Its accommodation was limited and was used mostly for military cases(1178).

(1173) Ibidem, 1916, p. 353, 1920, p. 105; Customs Decenn. Rep., 4th Issue. Vol. I, p. 297.

(1174) Ibidem, Vol. II, p. 98.

(1175) China Med. Jl., 1924, p. 424.

(1176) 1930 Directory of the Nat. Med. Assoc., Med. Instit., p. 49.

(1177) China Med. Jl., 1916, p. 208.

(1178) Customs Decenn. Rep., 4th Issue, Vol. II, p. 364.

Dr. W. H. Dobson who had re-established work at *Yeungkong* (陽江縣—Kwangtung Province) in 1897 and in 1902 opened the Forman Memorial Hospital on behalf of the Northern Presbyterian Church, began in 1915 to treat, with the aid of the Mission to Lepers, the unfortunate victims of this disease. They had been housed in the "Emperor's Mother's Village" named after the mother of a former emperor who had herself been a victim, in miserable hovels. With the aid of funds from America, wooden sleeping boxes with screened windows were built to segregate a number, and treatment was given as far as feasible.

A Catholic dispensary was opened in the city in 1918 and in 1920 a trained nurse with special qualifications, belonging to the Maryknoll Sisters was stationed there. At the same time the work was enlarged and an Infant Asylum opened. Medical aid was also given in other parts of the district by the priests who were specially trained in first aid, minor surgery and tropical diseases and had had one month's active service in a New York hospital. The number of trained nurses sent out was limited and unfortunately, one of them, Sister Gertrude Moore, died from typhoid contracted from a patient(1179).

On July 1, 1915, a small hospital was opened at *Tengyueh*, with subscriptions from a few Chinese officials and gentry. It was managed by a committee of seven Chinese members with Mr. W. J. Embery of the China Inland Mission as president and honorary treasurer. The medical service was in the hands of Customs Medical Officer R. L. Sircar. A charitable institution on the Chinese model was also established by the people, who were able to erect a fine building for the purpose(1180).

A portion of the old German Government Military Hospital at *Tsingtao* was opened for the use of civilians in June 1916. In March 1921 a spacious new hospital was established by the Japanese in the same compound, with thoroughly up-to-date facilities. It had two branch establishments in the city where free treatment was given to the poor(1083).

At *Antung* a new hospital was completed by the Danish Mission under Dr. Ellerbek in 1911. A Chinese hospital called the Antung I Yuan (安東醫院) was founded with funds left over from the appropriation for local anti-plague work and opened in October 1911. Being unsuitably staffed it was not popular at first. In 1912, however, the

(1179) China Med. Miss. Jl., 1903, p. 36; China Med. Jl., 1930, p. 771; personal information from the Rev. Father J. P. McGinn (February 13, 1930).

(1180) China Med. Jl., 1916, p. 256; Customs Decenn. Rep., 4th Issue, Vol. II, p. 397.

Chamber of Commerce began to subsidise the establishment and a graduate from the Mukden Medical College was employed to take charge. A Japanese nurse from the South Manchurian Railway Hospital assisted in the treatment of women and children and a Red Cross Hospital, which afforded free treatment and medicines to the poor people and soldiers, was attached.

The South Manchurian Railway Hospital was completed in 1912 at an estimated cost of Yen 189,000. Though quite popular, it was difficult to balance income and expenditure(1181).

At *Lungchingtsun*, a branch of the Yenkiifu Government Hospital under the control of the Taoyin was opened in 1916. In the same year the Canadian Presbyterian Mission started work for Chinese and Koreans in a well-equipped building. In 1918 the Chosen Government Charity Hospital was opened to take the place of the Japanese Hospital described in the previous chapter(1182).

When the *Kuling* Medical Mission occupied a new hospital building in 1914, accommodation was set aside to take care of tubercular Chinese at moderate charges. In 1919 Dr. Venable was transferred from Kashing to take charge of the Kuling Medical Mission and to help in establishing the Kuling Community hospital for foreigners (see Chapter XI). Successful work was carried on until 1927, when the civil war necessitated its closing down(1183).

Referring unimportant or less complete data to the chronological table, we now turn to some new activities started between the years 1911 and 1920.

At *Nanning* (南甯府) in Kwangsi Province two hospitals were opened in 1911. The larger with 31 beds was a private institution run by the Customs Medical Officer. A small hospital with about 13 beds and a ward for foreign patients was run by the Seventh Day Baptist Mission. It was gradually enlarged, so that in 1929, 46 beds were available(1184).

There existed at *Hunchun* (琿春) in Manchuria under the control of the Shen-pan-t'ing (審判廳) an establishment for the cure of people afflicted with the morphia habit, the expenses of which were defrayed from official funds. It had space for 40 persons of each sex (1185).

Medical work of the English Presbyterian Mission was commenced at *Shanghang* (上杭—Fukien) in 1914 in Chinese premises and a proper hospital built in 1916.

(1181) Ibidem, 3rd Issue, Vol. I, p. 106, 4th Issue, Vol. I, pp. 77-78.

(1182) Ibidem, p. 42; Cadbury and Jones, l.c., p. 173.

(1183) China Med. Jl., 1914, pp. 208, 240, 1927, p. 822.

(1184) Customs Decennial Rep., 4th Issue, Vol. II, p. 306; 1930 Directory of the Nat. Med. Assoc., Medical Inst., p. 53.

(1185) Customs Decenn. Rep., 3rd Issue, Vol. I. p. 67.

The first modern hospital opened at *Shasi* in Hupeh Province in 1915 was a small private Japanese hospital with accommodation for 10 patients. In 1919 the Swedish Mission commenced work in a Chinese house, where 30 patients could be sheltered. This establishment was under a modern-trained Chinese doctor with a European nurse (1186).

Through the generosity and enterprise of the Hon. Mr. Lau Chu-pak (劉居白), of Hongkong, a hospital for 100 beds was established in 1916 at *Pingwu* (平湖) not far from Hongkong in Kwangtung Province. Four Chinese physicians attended, one of whom used modern methods of treatment (1187).

The *Changchow* General Hospital (武進醫院) owed its existence to the initiative of the gentry who approached the mission leaders, promising liberal support. The hospital was accordingly opened in an old *yamen* in July, 1918, under Dr. W. B. Russell. Interesting features were a Maternity Department under a specially trained Chinese nurse and a Nurses' Training School with classes for men and women.

Dr. Russell carried on the work until his death from typhus fever in 1925. A fine new plant, called the *Stephenson Memorial Hospital* was erected under his successor Dr. R. M. Paty, Jr., in 1933 (1188).

Work for lepers was started at *Tenghsien* (滕縣) in Shantung Province early in 1919 with the aid of the Mission to Lepers, when a Home for men was opened. An establishment for women followed in December, 1923. The asylum, which continues to exist, provides suitable work for the inmates (1189).

The *Tai-kam* Leper Colony (Canton), started about the year 1920, has an interesting history. For many years the Rev. John Lake and his wife worked for the lepers, but it was only when Dr. Wu Ting-fang became interested in their efforts, that the plans materialized. Looking for a suitable island off the southern coast they decided upon *Tai-kam*, within sight of Saint John's Island where St. Francis Xavier died in 1552 whilst seeking entrance into China. Dr. Wu Ting-fang bought the island and a number of substantial buildings for male lepers was erected followed by a second unit of fifteen buildings to house female patients (1190).

The Elizabeth H. Blauvelt Memorial Hospital was erected in 1920 in *Tungan* (同安—Fukien), and Dr. M. Vandeweg, the first resident foreign physician in the city, arrived to take charge (1191).

(1186) *Ibidem*, 4th Issue, Vol. I, p. 273; *Encyclop. Sinica*, p. 168.

(1187) *Customs Decenn. Rep.*, 4th Issue, Vol. II, p. 239.

(1188) *China Med. Jl.*, 1918, pp. 397, 606; *Nat. Med. Jl.*, 1918, p. 185; *Chin. Med. Jl.*, 1933, pp. 197, 723.

(1189) *China Med. Jl.*, 1930, p. 798.

(1190) *Gallimore, ibidem*, p. 769.

(1191) *Ibidem*, 1920, p. 107.

CHAPTER XIII

PERIOD 1921—1927

SUBSTANTIAL PROGRESS IN PUBLIC HEALTH AND OTHER MEDICAL ACTIVITIES MAINLY UNDER DIRECTION OF CHINESE PHYSICIANS

Municipal Public Health activities at Canton—National Health Association—Missionary Public Health activities at Canton—Public Health work at Hangchow—International Mission to Lepers—Campaign against Venereal Diseases at Shanghai—American Red Cross work—Efforts in Industrial Hygiene—Health Campaign at Peking Colleges—Health Associations at Soochow and Changsha—Peking Community Service Group—Public Health work at Nanking—Pasteur Institute at Tientsin—Health Demonstration Station at Peking—Department of Health, Port of Shanghai and Woosung—Voluntary Health services at Shanghai—Chinese Mission to Lepers—Health campaign in South China—Activities of Medical Associations—New Medical Societies.

Opening of new Union Medical College, Peking—Reorganisation and work at China Medical Board—Medical Department, National University of Peiping—Kung Yee University Medical School, becoming in 1926 the Sun Yat-sen University Medical School—Hackett Medical College—Woman's Christian Medical College, Shanghai—Private medical schools at Shanghai—College of Medicine, National Central University—Pennsylvania St. John's Medical School—Tung-chi Medical School—Cheloo University Medical School at Tsinanfu—Hangchow medical school—Tsingtau Hospital school—West China Union University School at Chengtu—Harbin Medical School—Training of hospital technicians and nurses—Work on Medical Terminology and medical publications—Hospital activities.

The period 1921-1927 is chiefly characterized by substantial progress in the field of public health and disease prevention thus heralding in the great achievements made by consolidation and coordination of this work under the National Government. In dealing with the progress made during the period now under review we shall have to proceed in chronological order with earlier endeavours the history of which goes back to the period described in the preceding chapter.

As already noted, public health work at *Canton* was placed upon a firm basis when a municipality was established in 1920 and health administration made one of the six divisions of the work under Dr. S. M. Woo. An excellent description of these activities was given by Dr. Li Ting-an of the Union Medical College (Peking) in 1925. According to him, the Department of Health was subdivided into the divisions of sanitation and of prevention and into two offices of public health education and vital statistics. The staff, numbering about one thousand, was under a commissioner. The department was responsible for:—

1. Street cleaning;
2. Inspection and regulation of public markets, slaughter-houses, public baths, saloons, restaurants, theaters, and public latrines;
3. Registration of births, deaths, marriages and other vital statistics;
4. Registration of medical practitioners, drug stores, and private hospitals;
5. Control of the public health laboratory, hospitals for communicable disease, and the hospital for the insane;
6. Other activities pertaining to public health.

The activities of the Health Department were governed by the Municipal Regulations promulgated in the year 1921 which dealt extensively with the matter.

The total expenditure of the Department in 1921 was as follows:

Prevention and health service	\$159,315
Hospital Service	172,321
Total	<u>\$881,636</u>

(Total Expenditure of Municipality \$2,880,000).

The funds for hospital service were used for the whole or partial support of the following institutions:—

Contagious Disease Hospital (1192)	\$10,000
City Hospital	35,492
Yu Ying Tang	9,600
Lepers' Hospitals (1193)	35,800
Kerr Hospital for Insane	31,800
Pu Chi Sam Yuan (1194)	49,629
Total	<u>\$172,321</u>

(1192) Housed in a former temple outside the North Gate, it had a capacity of 30 beds and three part-time medical officers.

(1193) These two missionary establishments were: (a) One at Shek-lung under a French Missionary; (b) One at Shew Tam managed by a German Missionary.

(1194) Three hospices for the aged and blind.

There existed also a small laboratory in connection with the Municipal hospital, one of its duties being the preparation of small-pox vaccine.

Dr. Li Ting-an adds that these excellent plans were not uniformly enforced so that there was ample room for improvement. Nevertheless, one cannot help being struck by the great progress made in the 120 years following the first activities, on a necessarily limited scale, of western-trained medical men in China.

From later reports it can be gathered that the Canton Municipal Health Department had in 1927 a budget of \$582,806. A municipal crèche, capable to take care of 80 children of working mothers, was opened in 1933 (1195).

In 1921, Dr. S. M. Woo (Hu Hsuan-ming 胡宣明) first Health Commissioner of Canton but soon retired, founded a purely Chinese *National Health Association* (1196) of which he became the executive secretary, supported by a committee with Mr. C. C. Nieh (President of the Shanghai Chinese Chamber of Commerce) as chairman, and Dr. E. S. Tyau (President of the National Medical Association) as vice-chairman.

The committee decided to launch a nation-wide campaign from May 22 to June 15, 1922. In Shanghai ten teams were formed, one of which was made up entirely of leading physicians under the caption of the Hua To Team (華佗隊). Its members were Dr. E. S. Tyau (Captain), Drs. T. K. M. Siao, K. Chow, Mary Stone, A. M. Wong, Seto Poh, U. K. Koo, J. C. Chang, D. C. Chang, E-li Day and Zee Tze-foong.

Unfortunately the Association did not find sufficient backing and therefore lasted only two years.

Modern public health work was also started by missionary institutions at Canton. In October, 1921, the Canton Hospital opened a Department of Public Health Service under Dr. Frank Oldt. Among its activities were: (a) the conducting of a *Trachoma* survey and clinics; (b) a study of the *Hookworm* problem with a view to eradication measures.

The work was vigorously continued until the temporary closing of the hospital in March 1926, when it was found difficult to maintain certain activities like health work in schools, teaching of preventive medicine and public health in the Kung Yee Medical School. Other

(1195) Nat. Med. Jl., 1925, p. 324.—See also *ibid.*, 1921 p. 4; Grant & P'eng, Chin. Med. Jl., 1934, p. 1074; China Year Book 1935-36, pp. 1689, 1693.

(1196) China Med. Jl., 1922, p. 551; Nation. Med. Jl., 1922, p. 125, 1923, p. 132 (Paper on "The Problems of the Future of the National Health Association" read by S. M. Woo at the C.M.M.A. Conference, Shanghai, 1928).

activities were carried on until Dr. Oldt went on furlough in June 1927.

When he returned in November 1929, the work was resumed, especially Hookworm research, teaching at Hackett Medical College and other schools.

Next, a *Purity Campaign* (directed against sexual evils) started in the autumn of 1921 under the Canton Christian Council; here again Dr. Oldt took a prominent share(1197).

A Child Welfare Clinic was opened in March 1924, by Dr. Margaret Taylor Ross of the David Gregg Hospital. The number of children brought to the clinic rapidly increased so that from March 1924 up to June 1926, there was an enrolment of 525. On registration, each child was thoroughly examined. To attain efficiency and uniformity, the blanks and booklets of the Council on Health Education were used.

Not only the nurses but also fourth year students of the Hackett Medical College took a laudable part in the work which, in 1926, was supervised mainly by the assistant of Dr. Taylor Ross, Dr. Leung Ngai Man.

In 1927, Maternity (Pre-and Post-Natal) Clinics were started but made slow progress at first. New impetus was given when in 1928 the Young Women's Christian Association commenced public health activities and arranged to join forces with the already existing institutions of the David Gregg Hospital. A Home Visiting Department was opened and this materially increased the number of visitors to the maternity clinics. Further, a Mother's Club was arranged and—as far as the limited trained staff permitted—teaching on health subjects undertaken in a few schools(1198).

The history of public health work at *Hangchow* goes back to the year 1920 when a Better Babies Campaign was started by Dr. K. Chimin Wong (王吉民), Railway Medical Officer, and Miss Mack of the Young Women's Christian Association. It was under the joint auspices of the Provincial Educational Association, Medical and Pharmaceutical Association, Y.M.C.A., Y.W.C.A. and the Union Committee. The work was divided into three main sections: (a) educational, consisting of lectures, study classes, moving pictures and other demonstrations, pamphlets, prize essays, etc.; (b) exhibits of babies' clothing, food, feeding outfit, etc.; (c) physical examination of babies by a staff of local doctors and nurses who gave instruction and advice to the mothers. In addition, mothers' clubs and a child welfare

(1197) Canton Hospital Reports, 1921, p. 74, 1922, p. 75, 1924-30, p. 23; Dr. Oldt, China Med. Jl., 1923, p. 776 ("Purity Campaign, Canton").

(1198) Taylor Ross, China Med. Jl., 1927, p. 250; Ng Tsit-wa, *ibidem*, 1930, p. 949.

clinic were established, school health work and education in health habits organized, annual exhibits held, and anti-fly campaigns started. An article published by Dr. K. C. Wong in 1924(1199) recorded most gratifying results.

About the beginning of 1920, the International *Mission to Lepers* decided the time was ripe for extension in China. The immediate step towards this end was the appointment of a Secretary for Eastern Asia in the person of Dr. Henry Fowler, who took up his duties early in the following year with headquarters at Shanghai. As General Secretary W. H. P. Anderson reported in 1930

among other things, much ground was covered in securing by survey a more detailed knowledge of the leper situation. Attention was given to the medical requirements of the various stations in relation to the recent advance in medical treatment for leprosy and arrangements were made for supplies of drugs to be sent to leper homes and also to Mission hospitals and dispensaries where lepers were being treated as out-patients.

In December, 1920, *Shanghai* was visited by a commission, appointed by the British National Council for Combating *Venereal Diseases*, consisting of Mrs. C. Neville-Rolfe, General Secretary of the Council and Educational Commissioner and Dr. Rupert Hallam of Sheffield, Medical Commissioner. The Shanghai Municipal Council appointed an Advisory Committee with Judge Skinner Turner as chairman and Dr. W. W. Peter as secretary and local secretary to the Commission. The latter held meetings with all parties interested in the combating of venereal diseases and made the following recommendations:—

1. To consider the provision of facilities for the free treatment of venereal disease by the Municipal Council
 - a. For the foreign population through a venereal disease clinic connected with the General Hospital, a full-time specialist to be attached to the Health Office as Assistant Health Officer;
 - b. For the seafaring population in the same hospital with a centre for early treatment near the docks;
 - c. For the Chinese population through formation of V.D. clinics in existing hospitals with Chinese staffs under the supervision of the Municipal V.D. officer.
2. To consider the rendering of certain services to the medical faculty with reference to the provision of facilities for
 - a. Free diagnosis;
 - b. Free treatment;
 - c. Free post-graduate courses.
3. To consider steps for public enlightenment.
4. To consider the provision of increased facilities for treatment of municipal employees and prisoners.
5. To consider further steps for suppressing prostitution.

The subject of moral welfare at Shanghai was again thoroughly discussed in 1923 by the Shanghai Medical Society and a committee for the study of this question was appointed under the chairmanship of Dr. E. L. March, which published a valuable report in January 1924 (1200). Here abolition of supervision of prostitutes, facilities for treatment and prophylaxis, a Venereal Diseases Department under the Commissioner of Public Health and educational measures were recommended.

The Municipal Council actually appointed in 1923 a doctor especially qualified in venereal work as permanent Assistant Health Officer and in July, 1923, opened a free Municipal Clinic for Venereal Diseases at the General Hospital (1201).

Due recognition must also be taken of the *Famine Relief work*, including *anti-typhus measures*, in which, besides the authorities and missionary bodies, a prominent part was taken by the *American Red Cross*. Another benefaction of the latter was the distribution of an ample amount of medical supplies and hospital equipment, representing the surplus of stores accumulated during the war at Vladivostok, to missionary hospitals and other institutions in China.

The endeavours to alleviate the lot of the *industrial workers*, especially women and children, were continued. In 1921 the Y.W.C.A.—acting upon a resolution of a Conference of Chinese and foreign women at Shanghai—brought an industrial specialist, Miss Agatha Harrison, to China. The National Christian Conference of 1922 adopted resolutions opposing child labour and recommending provisions for the health and safety of workers. It was attempted to carry out such a programme in a number of centres through the National Christian Council; the best immediate results were obtained at Chefoo. At Shanghai the Y. M. C. A. provided athletic directors, teachers, medical attention, etc., to workmen and replaced a section of insanitary dwellings by a model village.

An *Industrial Commission* was formed at Shanghai on behalf of which Miss Dingman addressed in May, 1924 the Executive Committee of the China Medical Missionary Association. The Committee recommended:—

1. The desirability of the study and of the gathering of reliable information with a view to improve hygienic conditions in factories, abolish as far as possible child labour and reduce hours of labour;

(1200) Supplement to the China Medical Journal, January 1924 (No. 1).

(1201) China Med. Jl., 1920, pp. 630 (K. C. Wong, "The Social Evil in China"), 635, 1921, p. 61 (W. W. Peter, "Fighting Venereal Diseases Openly"); Shanghai Munic. Health Rep., 1923, p. 29; Gray, China Year Book, 1924, p. 607.

2. To urge the co-operation of missionary doctors in conducting an Anti-phosphorus campaign;
3. To support the proposal of the Commission to secure the services of Dr. Maitland for an experimental period of six months with a view to his investigating the medical aspects of industrial hygiene in the Shanghai area;
4. That industrial hygiene be one of the topics discussed at the coming Hongkong Conference.

A Health Education campaign in *Peking Colleges*, directed by a Committee of the Peking Medical Missionary Association and under administration of the extension department of Peking University, started work in summer 1921, when two students of the Peking Union Medical College lectured on topics of hygiene and public health in 42 summer vacation schools (1202).

A Public Health Association was formed at *Soochow* in May, 1922, which won the recognition of the police authorities. As one of the first steps a health exhibit was held in June, accompanied by a vigorous campaign. During the summer months a free dispensary was kept in the building of the Y.M.C.A. which participated in the work together with some other Chinese and missionary organizations (1203).

About the same time, under the direction of the Hunan Health Association, a health centre was created at *Changsha* where a health campaign had already been held in 1915. The first undertaking of the centre was to organize a children's health clinic which became so popular that, in a few years' time, the number of children periodically examined and advised amounted to thousands.

A second health campaign with an exhibit and lectures was held at Changsha in 1923 and was a great success, some thirty thousand people attending.

Soon after this, a similar centre was established at *Peking* as a union missionary undertaking. From a report published in 1922, (1202), we find that the activities of this "Peking Community Service Group" comprised educational work, recreation and play-ground development, social clubs, social investigation, district health work, poor relief and moral reform. The services of a visiting nurse were secured and a pre-natal clinic added.

As pointed out in a paper by Dr. V. B. Appleton on these stations (1204), several other centres followed but met with varying fates as it was not easy to obtain trained workers or even supervisors.

(1202) *China Med. Jl.*, 1921, pp. 122, 161, 275, 1922, p. 87, 1924, p. 497, 1930, p. 744; Latourette, l.c., pp. 792-793.

(1203) Kuang Hsueh Li, *Nation. Med. Jl.*, 1923, p. 122.

(1204) *Nat. Med. Jl.*, 1924, p. 94. See also *China Med. Jl.*, 1923, p. 622.

From a Health Survey of *Nanking* published in 1929 (1205) we find that in 1922 an anti-fly and anti-mosquito campaign was conducted by the joint efforts of the Kiangsu Entomology Bureau and the Police Department (1206). The results were striking but the time was not ripe to use them as a foundation for permanent efficient work.

A Pasteur Institute for carrying out anti-rabic treatment as well as bacteriological and serological work was opened in 1923 in the French Concession of *Tientsin* under Dr. Lassouarn. It was situated in the newly-named Rue Pasteur, the former Rue de l'Amirauté (1207).

A most important step was the creation of a *Health Demonstration Station* in the East City of *Peking*. In order to promote public health work in the capital on the one hand, and on the other, to afford facilities for practical training of the students of the Union Medical College, arrangements were made in 1925 between the Metropolitan authorities and the College to introduce modern health procedures in the second left inner ward of the city which contained a population of 58,000. Dr. Shisan C. Fang (Fangchin), Director of the Station until 1926 (when he was succeeded by Surgeon-General S. H. Chuan), and two of the principal medical officers were also officers of the Epidemic Prevention Bureau so that co-operation with this institute was effected in addition. The head of the Department of Hygiene and Public Health of the P.U.M.C. was to act as adviser and consultant.

The work of the station was begun in September, 1925, in a remodelled temple situated about half a mile from the medical school. Four branches were originally provided for—namely, General Sanitation, Vital Statistics, Medical Services and Communicable Disease Control. They were soon reduced to three by placing infectious disease control under the officer in charge of vital statistics.

The division of sanitation had trained sanitary inspectors and co-operated with the police in the protection of water from pollution, control of fly breeding, inspection of food, beverages, etc.

The functions of the division of vital statistics comprised registration of births and deaths, investigation of causes of death, control of communicable diseases and administration of preventive inoculations.

(1205) P. Z. King, Y. Y. Ying and Y. T. Yao, *China Med. Jl.*, 1929, p. 1128.

(1206) Similar successful campaigns were conducted in the same year at Shanghai and Soochow.

(1207) *China Med. Jl.*, 1923, p. 203.

The medical branch maintained a school health service(1208), an industrial medical service(1209) and undertook the functions of a health centre for the population through providing preventive and curative clinics together with the necessary health nursing services. Stress was naturally laid upon pre-natal and obstetrical care as well as upon the welfare of infants and children(1210).

Equal in importance to the work at Peiping was the institution of a new *Department of Health, City of Shanghai*, in August, 1926. The inauguration of this comprehensive service was made possible through the creation of a special area comprising Nantao, Chapei, Pootung, Kiangwan and Woosung with a combined population approximately of one million. Through the efforts of Mayor V. K. Ting (丁文江) (geologist trained in England), who was appointed as the first Director of the Area, Mr. T. Y. Yen, Commissioner of Police and Mr. Li Pin Sze, a prominent member of the gentry, the decision was reached to consolidate the existing nominal health departments of both the police and civil authorities. Dr. Hou-ki Hu (胡鴻基), graduate of Johns Hopkins School of Public Health, was entrusted with the task of organizing the new service. From a description given by him in 1927(1211) it can be gathered that it was one of seven sub-departments of the Municipality and contained three branches: (a) Division of Sanitation and Street Cleaning; (b) Division of Vital Statistics, Regulation of Practice of Medicine and Meat Inspection; (c) Division of Communicable Disease Control and Laboratory. The Department was originally under the Commissioner of Police with the chief technical expert as Deputy Commissioner. A Board of Health composed of 12 members advised the Commissioner as to the policy to the adopted(1212). The budget of the Department was originally \$160,428, over 60% of which had to be spent for street cleaning. It was only about a year under the Chief of Police, Dr. Hou-ki Hu afterwards becoming full commissioner.

The further development of the department will be discussed in the following chapter.

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- (1208) For detailed information on this see J. C. Fang and T. A. Li, *China Med. Jl.*, 1929, p. 697.
- (1209) In connection with this a health service was organised in August 1926 in the Yenching Rug Factory, a detailed description of which is given by Dr. Hsun-yuan Yao, *China Med. Jl.*, 1929, p. 379.
- (1210) Marion Yang, *ibid.*, p. 920; *China Med. Jl.*, 1926, p. 740; Rep. of the China Med. Board, Rockefeller Foundation, 1925, p. 16, 1926, p. 11.
- (1211) *China Med. Jl.*, 1927, p. 429.
- (1212) On this served four members of the National Medical Association viz. Drs. C. V. Yui, Yui Yin Zur, W. L. New and W. S. New (*Nat. Med. Jl.*, 1927, p. 149).

Useful work was also done by *voluntary health agencies*. Foremost among these was the *Council of Health Education*, the direction of which was taken over from 1927 to 1929 by Dr. Iva M. Miller. The work comprised the following branches: (1) Administration; (2) Community Hygiene (1213); (3) Child Hygiene; (4) School Hygiene; (5) Chinese Literature. This Council was voluntarily liquidated in 1930.

Among the activities of the Council in Shanghai, the work of the Department of Chinese Literature which co-operated with the Health Department of Greater Shanghai in bringing out the monthly "Health" magazine in Chinese (with a quarterly English supplement) and the weekly Health News Service for newspapers, deserves special praise.

A Public Health Demonstration Centre was opened in October 1927, at the *Margaret Williamson Hospital* with a Public Health nurse, Miss Hazel Taylor, a Chinese graduate nurse, Miss Chang Su O, and a number of pupil nurses, while a doctor was furnished by the hospital to attend the Well Baby Clinic one morning each week (1214).

A baby clinic was also conducted at the Nantao Health Centre. The work was under Miss Tsai, trained at the Health Demonstration Centre in Peking, assisted by Mrs. Wu. The services of the dental hygienist of the Council on Health Education were donated one day a week.

In August, 1927, a group of Chinese physicians and business men belonging to the Y.M.C.A. started a Baby Clinic in *Chapei*. Six physicians each gave half a day each week to the examination of babies and advice to mothers, while two nurses helped in this promising work (1215).

In 1926, the *Chinese Mission to Lepers* was organised as the result of a visit from Mr. William M. Danner of the American Mission to Lepers. The Chinese society, in the foundation of which a prominent role was played by Dr. Fong Sec and Mr. W. Yinson Lee, had, as its first honorary president, Mr. Tong Shao-yi, while the Rev. T. C. Wu was appointed general secretary. From a report published by

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- (1213) Under this department, the valuable "Survey of Public Health Activities in Shanghai" was made by Field Director C. S. Kim, from which we have amply quoted (published in the *China Med. Jl.*, 1928, p. 162).
 - (1214) Miss Hazel Taylor gave a detailed description of the work in the *China Med. Jl.*, 1929, p. 350.
 - (1215) The above information in regard to Shanghai has mainly been culled from the following sources (besides those already mentioned): *National Med. Jl.*, 1926, p. 413, 1928, p. 256, 1929, p. 822, 1931, p. 378; 1930 Directory of the Nat. Med. Assoc., Shanghai, pp. 4, 8, 12.

the latter in the Leprosy number of the China Medical Journal(1216), the following survey of the work is culled:—

- (a) *Educational Propaganda*. This comprises the publication of a *Leper Quarterly* and of pamphlets together with campaigns personally conducted by the General Secretary;
- (b) *Promoting and assisting leper hospitals and dispensaries*;
- (c) *Supplying Chaulmoogra Oils* and their derivatives and other drugs for the treatment of the disease;
- (d) Activities amongst *Chinese Settlers in the South Sea Islands*.

The work of the Mission in the *Hongkew General Dispensary* at Shanghai will be discussed later.

A successful *health campaign* was started towards the end of the year 1927 under Drs. Miller and Kim of the Council on Health Education, embracing Canton, Hongkong, Swatow, Amoy and Foo-chow. Especially important was the work done at Canton and Amoy. In the first mentioned city exhibits were held and lectures which were visited by almost 30,000 persons, given in the Y.M.C.A. building. Contacts were made with all the Middle Schools, Colleges, Hospitals and Medical Schools and with the various heads of the municipal departments. Hearty co-operation was received from the Health Commissioner. The work at Amoy will be dealt with in the next chapter(1217).

Turning to the work of *medical societies*, we shall begin with the National Medical Association which held an independent meeting at Shanghai in 1922 because the China Medical Missionary Association had postponed its conference until 1923.

The 1922 Conference of the National Medical Association was attended by delegates from over 20 cities with an average attendance of 60 members. They were welcomed on the evening of January 31 by President C. V. Yui who, in his presidential address the next morning on "A Retrospect of Our Past Years' Work", stated that:—

- 1. Since 1918, all members, except the affiliated and honorary, had been entitled to the same privileges irrespective of the school they had graduated from;
- 2. The *Journal* had obtained a wider circulation and its articles had been abstracted in the American Medical Association Journal and occasionally reproduced in the Archives of Medicine or elsewhere;
- 3. A *Medical Directory* had been prepared by the Business Manager, which contained the names and addresses of 1,390 qualified Chinese doctors;
- 4. The members of the Association had shown keen interest in the promotion of *public health* such as Plague Prevention, Hookworm Campaign, Health Education Movement, all of which owed much to their efforts;

(1216) China Med. Jl., 1930, p. 746.—See also Nat. Med. Jl., 1926, pp. 273, 275, 1931, p. 674.

(1217) Miller, A Health Campaign in South China, China Med. Jl., 1928, p. 154; Kim, *ibidem*, p. 177.

5. Excellent progress had been made in Medical Terminology work (see later).

On this and the three following days, the mornings were devoted to the reading and discussion of scientific papers both in Chinese and English. In the afternoons, two public addresses were delivered (1) by Dr. Wu Lien-teh on "The Second Plague in Manchuria 1921" and (2) S. M. Woo on "Public Health in China." Besides, two to three hours were spent each day in the inspection of hospitals, water-works and factories. Part of the meeting on February 4 was devoted to business when the following Resolutions were passed:—

1. That the Ministry of Interior be petitioned to recognize, without delay, the new *nomenclature* passed by the Terminology Committee;
2. That the Association record its hearty indorsement of the proposal of missionary colleagues in establishing a strong *union medical school* in Shanghai;
3. That the Nanyang Bros. (Chinese Tobacco Co.) be requested to send abroad at least three students every year to study medicine;
4. That the conference express deep appreciation of the splendid work already accomplished by the *Joint Council of Public Health Education* and request that such work be continued as before, not restricting its sphere of activity to mission institutions alone;
5. That the Association welcome and indorse the organization of the *National Health Association*;
6. That the Ministry of Interior be requested to write to the Customs Administration in order that the present unfair regulation against Chinese medical practitioners concerning the *purchase and use of morphine, cocaine, and hypodermic syringes*, be duly modified and placed upon an equitable basis;
7. That the Association request the Central Government to reconsider the petition submitted at the 1917 Conference in Canton, regarding registration of medical practitioners in China, so as to establish a legally qualified medical profession.

Six *honorary members* were elected (Dr. W. W. Yen, Mr. Hsiung Hsi-ling, Dr. Wu Ting-fang, Mr. C. C. Nieh, Drs. P. B. Cousland and H. Balme). *Sub-Committees* were appointed on Terminology, Membership and Public Health(1218).

The success of the meeting in 1922 was surpassed by that of the Fifth Conference in *Nanking* in 1924 (February 7-12). Ninety-five delegates from various parts of China attended and over fifty papers of scientific interest were presented and discussed. Of special note from a public health point of view were W. W. Peter's "Patent-Medicines—a Menace to the Public"; S. M. Woo's "Problems of School Hygiene in China"; S. F. Chao's "The Teaching of Hygiene in School" (read in Chinese); V. B. Appleton's "Health Center Movement"; K. C. Wong's "Some Experiences in Public Health Work at Hangchow"; W. P. Lin's "A Plea of Conservation of Vision in China".

Dr. E. S. Tyau stated in his presidential address that the Association had completed the first decade of its existence, attaining a membership well over 500, and dwelt upon the part it had taken in the standardization of Chinese medical terms as well as in the work of the Joint Council on Health Education. The third major activity of the Association, the publication of the Journal, also showed satisfactory progress. The address concluded with an appeal to carry on the work with greater *esprit de corps* than ever.

Among the *Resolutions* passed were:—

1. That the Council on Health Education should lay greater emphasis on *school hygiene*;
2. That the Ministry of Education consider the importance of *physical examination of students in schools* throughout China, paying special attention to the examination of the eyes for trachoma and defective vision;
3. That the *Canton and Hongkong Medical Associations* be recognised as *branches* of the National Medical Association (thus bringing the number of branches in active existence, together with those at Peking and Shanghai, to four).
4. That the journal be published *bi-monthly*, instead of quarterly.

Three *honorary members* elected were Dr. P. W. Kuo, president of the South Eastern University; David Z. T. Yui, general secretary of the National Y.M.C.A. and Dr. John Kirk, president of the China Medical Missionary Association (1219).

The Sixth Biennial Conference of the National Medical Association took place at *Shanghai* on February 16-22, 1926. 111 delegates were present and 105 papers were read, 85 of which were in Chinese, 20 in English. Among these the following, dealing with public health aspects, deserve notice: "The Use of a Portion of the British Indemnity Fund for Public Health Work in China" (F. C. Yen); "The Need of Setting a Standard for Hospitals in China" (Idem); "The Necessity of Public Health in a City" (J. L. King); "The Need of a Standardized Chart for Health Examination" (C. L. Kao).

As on previous occasions, hospitals and other institutions of interest to medical men were visited while a Health Lecture was delivered by Dr. W. W. Peter.

Among the *Resolutions* passed the following were specially important:—

1. That the National Medical Association express its great appreciation to the British Government and people for the return of the (Boxer) *Indemnity fund* and urge that a substantial portion of this fund be allocated for the specific purpose of *promoting public health activities* in China.

That this Association appoint the incoming executive officers and the six ex-presidents as a committee, with the power to co-opt others, to be known

(1219) *Ibidem*, 1924, pp. 39-50.

as the *Committee for the Promotion of Public Health in China*. The duties of the committee should include the following:

- a. To assist in securing the help of qualified public health experts, both foreign and Chinese, for the preparation of a suitable *public health program*, which will assure the greatest and most effective use of this fund when allocated;
 - b. To assist in the preparation of statements from time to time for the transmission to Great Britain and China as well as to various organizations and citizens of these respective countries with the view adequately to disseminate the opinion of the medical profession in China;
 - c. To confer with the members of the British Boxer Indemnity Commission upon arrival in China.
2. In connection with the *Anti-Opium Campaign* it was resolved:
- a. To give moral support to the Anti-Opium Society;
 - b. To work jointly with other medical societies to establish anti-opium smoking infirmaries in various localities;
 - c. To appoint a few competent members to compose a book on the use and dangers of narcotics for the general public;
 - d. To work conjointly with other medical and pharmaceutical societies in the fight against the indiscriminate use of narcotics and opium pills;
 - e. To appeal together with other medical societies to the League of Nations to limit the production of opium and other narcotics to the minimum amount necessary for medical purposes;
 - f. To request the local branches to help in the work of analyzing the various pills used for breaking the opium habit;
 - g. To urge members of the Association to organize anti-opium branches in various localities and further the work of the Anti-Opium Society.

The *Constitution* of the Association was amended so as

1. To have one vice-president for each branch;
2. The Chinese and English Editors to be included in the Executive Committee.

Drs. J. L. Maxwell and C. J. Davenport were made *honorary members* (1220).

The records of the *China Medical Missionary Association* also indicate the paramount importance which the problems of Public Health had reached. This point is well proved by the appearance in 1921 (as a Supplement to the *China Medical Journal*) of a voluminous statistical study upon *The Health of Missionary Families in China* by Dr. Wm. G. Lennox of the Peking Union Medical College (1221). While it is impossible to give a thorough analysis of this in-

(1220) *Ibidem*, 1926, pp. 179-186.

(1221) Followed in 1922 by "A Comparative Study of the Health of Missionary Families in Japan and China and a Selected Group in America." Two further articles deserving mention are Dr. Cadbury's "Analysis of the Health of a Missionary Community in South China" (*China Med. Jl.*, 1925, p. 723) and "The Birth Rate, Infant and Child Mortality in the Families of Chinese Preachers" by Drs. Daniel G. Lai and Suchen Wang Lai (*ibidem*, 1929, p. 359).

teresting compilation based upon a study of 1,300 families, the final conclusions reached may be quoted with advantage:—

In certain sections of China, or among certain groups, children of missionaries have as good a chance for life and health as children at home. Taking the missionary body as a whole, however, there has been an excessive loss of life among both children and adults. Much of this loss may in future be prevented. For such prevention, both intelligent vigilance on the part of the individual and a larger co-operative health program on the part of the churches is needed. Increased expenditure, if based on facts, would result in great money-saving, and would aid in bringing nearer the longed-for coming of the New Day to China.

In 1922, Dr. John B. Grant who had recently taken charge of the Department of Hygiene in the Union Medical College, Peking, directed a circular letter to the members of the China Medical Missionary Association closely allied with the principal missionary colleges, wherein he asked for suggestions for the *improvement of hygienic conditions in colleges and schools*, pleading for co-operation and the placing of the teaching of hygiene on a more permanent basis. An editorial of the China Medical Journal(1222), after commenting upon ways and means of realizing these schemes, went on to say:—

It is probably true that there has not been sufficient activity on these lines among us and that our public conscience may be underdeveloped. Some of us received our training back in the pre-Renaissance days and, like the Cave Man and the Turk, it is time we moved on to the land where the fly, the mosquito and the louse are non-existent. . . .

That there was much room for improvement in the life of foreigners in China was also proved by Dr. R. M. Atwater's *Community Sanitary Survey of Kuling* (1223) which showed a startling backwardness in some respects.

A Conference of the China Medical Missionary Association was held at Shanghai, February 14-20, 1923, in which 188 members and visitors took part(1224). The presidential address was delivered by Dr. C. F. Johnson and the following reports were presented:—

- (1) By the Executive Secretary, Dr. Beebe, who like the President touched on the question of eliminating the word "Missionary" from the Association's title with a corresponding change in its scope(1225);
- (2) By the Editor of the Journal, Dr. Edward M. Merrins, who stated that beginning from January, 1923, the Journal would be issued monthly. Dealing with the question of an amalgamation with the National Medical Journal, Dr. Merrins expressed the belief that that periodical should continue on its own in the Chinese language, or might amalgamate with the

(1222) 1922, p. 81.

(1223) Ibidem, p. 420.

(1224) As can be gathered from an interesting survey on the membership of the Association (China Med. Jl., 1923, p. 1025), in 1923 it had 506 members.

(1225) Dr. Beebe tendered his resignation to the regret of all on account of ill-health.

Tsinanfu Medical Review, published in the same language by the Medical Department of Shantung Christian University(1226);

- (3) By Dr. Cousland, on behalf of the Committee on Publication and Translation;
- (4) By Dr. S. Cochran, on behalf of the Research Committee, who stated that comparatively little work had been done on the normal anatomical and physiological constants of the Chinese;
- (5) By Dr. Henry Fowler, on behalf of the Hospital Administration Council by which progress had been stimulated along several lines. Special mention was made of the generosity of the China Medical Board, which provided, among other things, \$10,000 for the installation of X-ray plants.

The first paper read at the Conference was by Dr. Fowler (Shanghai) on *Medical Mission Policy*(1227), which was thoroughly discussed:—

While it was upheld that every mission hospital in China ought to be well staffed and equipped, a model of medical and surgical efficiency, that from it medical and sanitary knowledge should spread to the people and that it should be a centre of Christian propaganda, it was realised that many of the existing institutions had not reached this standard. Appeals to the home Churches were usually resultless and the situation of small hospitals was a precarious one. The question was raised how far the Chinese could be induced to support the work thus making it largely self-supporting. A further point was if new regions should be occupied or if it would not be wiser to concentrate upon work which could be done effectively, at the same time assisting the Chinese as much as possible to help themselves.

The Evening Session of February 15 was devoted to *Public Health* work. The first paper read by Mr. Charles Harpur, Commissioner of Public Works in Shanghai, dealt with the problem of Sewage Disposal in the International Settlement.

Dr. Wu Lien-teh then discussed the question: What public health activities are possible of immediate initiation in China? While stressing the need of active participation by all medical men, he emphasized that in all public health work, the point of view of the Chinese experts must be taken into serious consideration so that: (a) it might be ascertained what was practicable in China at the moment; (b) these needs would be measured in the light of what was attainable, considering the resources of men and of money available; (c) in the meantime, however, all should concentrate on preparing the ground for a real constructive programme for future work among the masses.

A third paper was read by Dr. Edgar H. Tsen, Chief Technical Expert of the Central Epidemic Prevention Bureau, Peking, describing the work of this institution; a fourth, by Dr. C. L. Kao on behalf of Dr. C. W. Woodworth, described the various methods of eliminating

(1226) This idea has been realized in 1932 when the "National Medical Journal of China and The Tsinan Medical Review" began to appear.

(1227) Published China Med. Jl., 1923, p. 246.

flies and mosquitoes which had proved successful in Nanking during the preceding summer.

The morning of February 16 was devoted to a discussion of hospital work, special stress being laid upon provision for the training of *Hospital Technicians*.

In the evening, Dr. C. Noel Davis delivered an address on "The Life and Work of Pasteur."

On February 17, a resolution was adopted emphasizing the need for *routine testing of the vision of school children*. Then, following a paper by Dr. Merrins(1228), the question of *Medical Ethics in China* was discussed. Dr. Merrins pointed to the diversity of opinion still prevailing in the West with regard to many points and said that if the Association should compile an Ethical Code, it ought to be simple and deal only with fundamental requirements, full allowance being made for differences due to Chinese customs and traditions. These views were endorsed in a resolution recommending the preparation of a code.

The same evening, Miss Nina Gage and Miss Cora Simpson dealt with the activities of the *Nurses' Association*.

On February 19, further papers were read on public health: Dr. W. W. Peter, speaking on "The Future of the *Council on Health Education*," stated that its work had increased so enormously that it required a budget of \$36,000 and asked for support. Dr. S. M. Woo dwelt on "The Future of the *National Health Association*," for which he urged the backing of the Chinese(1229). Resolutions were adopted that

- (1) More emphasis should be placed by medical missionaries on the science and practice of Preventive Medicine and to this end greater use should be made of Chinese doctors and trained lay helpers, both European and Chinese, who, under the necessary and adequate supervision of qualified medical men and in co-operation with the Council on Health Education, should devote their whole time and energies to such preventive work;
- (2) The Council on Public Health of the Association be composed of members actively engaged in preventive medicine and that the Council, in addition to other activities, definitely engage in providing, in co-operation with the Council on Health Education, a program of work which may be adopted by mission hospitals in forming health centres, and in school health work.

A third resolution dealt mainly with the safeguarding of the health of Christian workers.

During the Evening Session, Dr. McCracken of the Council on *Medical Education* referred to three important events which had occurred since the last Conference:—

(1228) Published *ibidem*, 1924, p. 679.

(1229) A paper on Child Hygiene read by Dr. V. B. Appleton of the Council on Health Education (*ibidem*, p. 588), also deserves mention.

- (1) The official opening of the Peking Union Medical College;
- (2) The report of an international Commission of Educational Experts who made a survey of all educational work carried on in China under Christian auspices (1230);
- (3) The publication of a comprehensive survey by the China Continuation Committee of all missionary work in China, giving the number and location of mission hospitals in the various provinces.

In addition, *sectional meetings* were held where numerous scientific papers were read and discussed.

The special thanks of the Conference were expressed to the *China Medical Board* which had helped the Association in various ways, specially by granting the sum of \$ Mex. 15,000 annually for two years and \$ Mex. 10,000 for the following three.

Besides the *Executive Committee* there were elected Committees on:

- (a) Publication and Translation under Dr. Cousland;
- (b) Public Health under Dr. John B. Grant;
- (c) Medical Education;
- (d) Research under Dr. W. W. Cadbury (1231);
- (e) To Consult with the Nurses' Association;
- (f) Hospital Administration under Dr. Henry Fowler (1232).

An important event of the year 1924 was a *Conference on School Health* convoked at the suggestion of Dr. Maxwell by the China Medical Missionary Association and the China Christian Educational Association at which the Council on Health Education, the Y.M.C.A., the Y.W.C.A. and the Nurses' Association were represented. Here, plans were laid for co-operation between doctors and teachers (1233).

A Joint Conference of the China Branch of the British Medical Association and the China Medical Missionary Association was held at *Hongkong* on January 20—28, 1925, when 165 members and 40 other physicians took part.

The presidential address of Dr. Kirk dealt with the "*Mission Hospital in Relation to Our Medical Missionary Programme*" (1234).

The Conference opened with a "Congregation" at which the honorary degree of Doctor of Laws was conferred upon Drs. H. S. Houghton (Peking), P. B. Cousland (Shanghai), E. H. Hume (Changsha) and Ernest Muir (President of the Indian Medical Missionary Association).

(1230) Published *China Med. Jl.*, 1922, p. 509.

(1231) In connection with this, a sub-committee on *Pharmacology and the Investigation of Chinese Drugs* was appointed, consisting of Drs. C. O. Lee, Yu Kuang, Peter Kiang, Bernard E. Read.

(1232) *China Med. Jl.*, 1923, pp. 257-314.

(1233) E. W. Wallace, *ibidem*, 1925, p. 437.

(1234) *ibidem*, 1925, p. 227.—For the official reports of the various committees, etc., see *ibidem*, pp. 151-168.

The following *public lectures* were given:—

- (a) Dr. Lim Boon-keng of Amoy University spoke on the late Sir Patrick Manson and his work for tropical medicine. Dr. Lim urged the erection of a Manson Memorial in Amoy. Since the hospital in which Manson had worked was closed, a Research Institute might be established in connection with Amoy University;
- (b) Dr. Oldt of Canton gave an illustrated lecture on Hookworms and Hookworm disease and also showed a film on the common house-fly and its danger to public health;
- (c) Dr. Davidson Black (Peking) delivered an instructive lecture on Prehistoric Anthropology.

The scientific program of the Conference lasted for three days and about 150 papers were contributed and read in eleven sections.

Among the papers in the section on *public health*, the following deserve notice:—

- (a) Co-operation in a School Health Programme by E. W. Wallace (1233);
- (b) Health and Modern Industries in China by Dr. C. T. Maitland (1235);
- (c) Opportunity for Preventive Medicine in China by Dr. F. J. Wampler;
- (d) Child Hygiene by Dr. Iva M. Miller (1236).
- (e) League of Nations Grading of Far Eastern Ports by Dr. C. E. Lim (1237).

An outstanding feature of the Conference was a symposium on *Hookworm*, including the work of the *China Hookworm Commission* which carried out an extensive program and survey in 1924 (1238).

Another important symposium was that on *Leprosy*. The results of a careful survey of the incidence throughout China were reported (1239).

The most far-reaching action of the Association was a change in its constitution by which its name became the *China Medical Association*. Active membership was thenceforth offered to all physicians of good moral character who were graduates of recognized foreign medical schools or of colleges in the Far East approved by the Association. A special *Medical Missionary Division* was instituted to promote the interest of medical missions.

It may be added that a draft of an Association *Code of Medical Ethics*, prepared by a sub-committee of the Executive, was adopted with slight changes (1240).

A new Committee on Hospital Technology was created under Dr. H. B. Taylor. The Council on Public Health was dissolved because

(1235) Ibidem, p. 1089.

(1236) Ibidem, p. 1101.—Dr. Miller read before the General Session a paper on "Health for China's Children" (ibidem, 1926, p. 253).

(1237) Ibidem, p. 422.

(1238) Ruth Svensson, ibidem, p. 668 (Observations on the Development and Longevity of Hookworm Larvae); N. Bercovitz (Practical Aspects of Hookworm Control in China), ibidem, p. 673.—Some details of the work of the Hookworm Commission at Soochow, Wuchang, Canton and Formosa will be found in the China Medical Journal, 1924, p. 252, while Dr. Bercovitz (ibidem, p. 413) reported on Hookworm Control in Hainan.

(1239) H. Fowler, ibidem, 1925, p. 584.

(1240) Published ibidem, 1926, p. 166.

most of the practical work decided upon by it had been referred to the Council on Health Education(1241).

The next Conference of the China Medical Association took place at Peking, August 31-September 8, 1926, under the chairmanship of Dr. Kirk, Dr. Cochran having been forced by ill-health to return home. He left a *Presidential Address* dealing mainly with the Faculty of Sympathy as Necessary to the Physician. This was read by the Chairman(1242).

In connection with this Conference, *public lectures* were held thus:

Dr. K. Shiga,	Public Health Work in Chosen;
Charles H. Frazier,	The Pituitary Body;
Henry S. Houghton,	Tendencies of Medical Education (1243);
Henry E. Meleney,	Past and Present Opportunities of Tropical Medicine in China (1244).

Among the more interesting *exhibits*, was one shown by the *Institute of Hospital Technology* by Dr. Hadden, and a *Public Health* Exhibition arranged by the Council on Health Education. The Vaccine Department of the *National Epidemic Prevention Bureau* was visited where an address by the Minister of Interior was read.

Papers on *Public Health* subjects were read by Dr. S. H. Chuan (Peking) on "Hospitals and Health"(1245), K. H. Li (Soochow) on "The Health Obligation of Mission Hospitals"(1246) and C. H. Han (Tsinanfu) on "A Survey of the Hygienic Conditions of the Mission Primary Schools in the Province of Shantung"(1247). The Conference afterwards discussed a *Health Programme for Mission Hospitals* which was referred to the Council on Health Education for further action. A resolution was also adopted endorsing the proposal of the Industrial Committee, National Christian Council, that scientific investigations within the field of industrial hygiene should be undertaken through the services of a trained worker.

A joint session of the Sections on Medicine and Public Health was devoted to the subject of *Malaria*(1248) and a resolution adopted calling for a concerted study of this problem in China.

(1241) *Ibidem*, 1925, pp. 241-268, especially Dr. Cadbury's excellent summary, p. 241.

(1242) *Ibidem*, 1926, p. 876.

(1243) *Ibidem*, p. 956.

(1244) *Ibidem*, p. 1189.

(1245) *Ibidem*, 1927, p. 229.

(1246) *Ibidem*, p. 222.

(1247) *Ibidem*, p. 206.

(1248) Papers on Malaria were read by Dr. Ernest Carrol Faust (Peking), *ibidem*, 1926, p. 937 ("An Inquiry into the Prevalence of Malaria in China") and by K. H. Li (Soochow), *ibidem*, 1927, p. 931 ("What a Mission Hospital can Contribute to the Study of Malaria").

Shortly before the Conference, a number of the *China Medical Journal* (March, 1926) appeared specially devoted to *Health* subjects. It contained a long report by Dr. W. W. Peter on "The Field and Methods of Public Health Work in the Missionary Enterprise" and a paper by Dr. Oldt on "Hookworm in Kwang Tung and some Suggestions for its Eradication" besides some articles read at the 1925 Conference. These instructive Health Numbers continued to appear.

An important result of the deliberations upon medical education was the adoption of a scheme of *Midwifery Training for Graduate Nurses* which was referred to a joint committee of the China Medical and Nurses' Associations. It was further agreed that graduates of approved Medical Schools in China who had received adequate post-graduate training, should be recognized as members of the teaching faculty of schools applying for registration.

Satisfactory progress was reported by the Research Committee (henceforth called the *Council on Medical Research*) which had provided for the publication of numerous contributions dealing with

(1) Physical Anthropometry; (2) Surgical Problems; (3) Physiological Standards; (4) Parasitology; (5) Clinical Problems; (6) Gynecological Data; (7) New Drugs of Interest to Scientific Medicine; (8) Diet and Metabolism.

Of note also is the report of a Committee on *Registration and Grading of Hospitals* which had been appointed after the last Conference and had devised the Minimum Requirements for Registration of Hospitals.

The deliberations of the Missionary Division dealt with the scheme of *Devolution* of medical missionary work on the Chinese Church. Undoubtedly, the same tendency for closer co-operation with the Chinese Christians led to the election of Dr. Arthur W. Woo (Hongkong) as Vice-president with Dr. Henry Fowler as President, while Dr. Way-sung New was made a member of the Executive. Dr. Maxwell, in addition to his other duties, was confirmed as Acting Editor of the *Journal* in place of Dr. Merrins who had retired before the Conference (1249).

Though repeated reference has been made in the foregoing pages to the activities of the *Council on Health Education*, it is now necessary to discuss certain phases of its work hitherto not considered.

Dr. S. M. Woo left Shanghai in January, 1921, to organize the Canton Municipal Health Department, returning after an absence of six months to resume his duties as Secretary to the Council. At the same time, he published an appeal drawing attention to the simple and cheap bulletins issued by the Council, both in Mandarin and in Wenli (for use in South China), and urged their broadcasting (1250).

(1249) *China Med. Jl.*, 1926, pp. 859-876, 881-915, 1028-1043, 1142-1145.

(1250) *Ibidem*, 1921, p. 493.

In 1922 the Council submitted to Governor Yen of *Shansi Province* a program for an introduction of health education in the schools. This was endorsed by the Governor who also proposed to provide similar instruction for police officers at Taiyuanfu. Plans were also made for eradication of the endemic foci of relapsing fever in the Pingtingchow district.

Dr. Fred. J. Wampler (Pingtingchow), a member of the Council on Health Education, reported in 1923 satisfactory results of a Child Health Campaign, carried out in the province by Dr. Appleton in autumn, 1922. In the capital of Taiyuanfu, this was facilitated by a Public Health Association founded early in the year. Such associations were also established in five out of the eight counties visited and everywhere public health activities were started(1251).

In 1923, Dr. John B. Grant reported on the *reorganization* and future of the Council. He stated that six organizations, including the China Christian Educational Association and the Nurses' Association, were now taking part in the work. Despite its short existence, the Council now felt able to plan specific health activities, being encouraged by the assurance that public opinion had reached the stage where such would be supported.

The community hygiene program included fewer publicity campaigns than had been carried on in the past and proposed to limit itself to those cities where such campaigns could be followed by some type of permanent health organisation committed to specific objectives.

A separate division of the Council dealt with school health work. Demonstrations in mission schools, at first chiefly in East China, were planned. To prepare teachers for hygiene education, the Council invited Dr. J. H. Gray to conduct an experimental summer school at Kuling in 1922—to be followed by four similar institutes in summer of 1923 at Canton, Kuling, Shanghai and Tsinanfu.

At the same time the Council continued the work leading to the establishment of health centres(1252).

In 1924 the Council again conducted a *prize essay contest*, the subject being "Medicine as a Life Work"(1253). As previously stated, Dr. W. W. Peter, the Director of the Council, reported in March, 1926, upon the methods adopted for the work.

In 1927 Dr. Maxwell reported upon the present and future outlook of the Council(1254). The troublous times had affected it very

(1251) Ibidem, 1922, p. 87, 1923, p. 83.

(1252) Ibidem, p. 603.—For Constitution and By-Laws of the Council see p. 606.

(1253) Ibidem, 1924, p. 433.

(1254) Ibidem, 1927, p. 671.

much insofar as the demand for health literature from missionary institutions had considerably fallen off while the financial position of the communities made the carrying out of health campaigns difficult. Dr. Peter had given up the post of Director more than a year ago while Dr. J. H. Gray, who had been lent by the Y.M.C.A. to fill this post, had recently gone on furlough.

It was resolved under these circumstances:—

- (1) Not to fill the post of Director at present;
- (2) To continue, under Dr. Iva Miller, the Child Health Department in conjunction with the Health Education Department of the Y.M.C.A. with a view to establishing Health Centres for children. Dr. Miller also proposed to continue the School Hygiene Department as far as practicable;
- (3) To give up the Council's show room and stores and hand over the sale of its material to two commercial firms (the Kwang Hsueh Publishing House for Posters, Charts, Bulletins and Pamphlets; the Association Press for Slides, Motion Pictures and Apparatus);
- (4) To engage modest offices in the Mission Building;
- (5) To assist the Health Department of Greater Shanghai in organising the educational part of its work. The services of Mr. Kao Shen were handed over to the Department, the Council continuing to pay his salary. The Journal "Health" was in future to be published jointly by the Department and the Council(1255).

The successful continuation of the work under Drs. Miller and Kim has already been considered.

Turning to the foundation of new medical societies, mention must first be made of the formation on April 16, 1921, of the *Shanghai Medical Society* which comprised medical practitioners of all nationalities. Its object was the promotion of medical, surgical and allied sciences in China by means of lectures and clinics. In addition, the privilege of using the extensive library of St. Luke's Hospital was given to members. The first committee consisted of Drs. S. A. Ransom (President); Howard G. Barrie (Vice-president); H. Lovett Cumming (Secretary and Treasurer); F. M. Neild, H. Fresson, H. H. Morris and Way-sung New (Councillors). The society continues to exist and started the publication of a "Journal of Clinical Medicine" in 1936 (1256).

A Peking Branch of the *Society of Experimental Biology and Medicine* was organized by members of the faculty of the Peking Union Medical College in autumn 1922. In connection with this College, there were also organized a *Faculty Medical Society* and a *Journal Club* which met twice monthly in alternate weeks. It was arranged that the Staff Medical Society should meet the Peking Branch of the China Medical Missionary Association once a month. The Chinese

(1255) Publication of this both in Chinese and English was started by the Council in 1924 (Peter, *China Med. Jl.*, 1926, p. 200).

(1256) *Nat. Med. Jl.*, 1921, p. 88.

members of the College also took a prominent part in the deliberations of the National Medical Association's branch in Peking.

A *Chinese Physiological Society* was formally instituted on February 27, 1926, on the motion of Dr. R. K. S. Lim, Professor of Physiology, Peking Union Medical College seconded by Dr. Hsien Wu. Membership was open to

any person who has conducted and published original researches or who is continuing researches in any of the physiological sciences (viz., biochemistry, physiology and pharmacology) and who has been a resident of China.

At the first General Meeting held on September 6, 1926, it was resolved to publish a *Chinese Journal of Physiology*. The first number of this quarterly appeared in January, 1927, edited by the members of the Committee. Succeeding issues have still considerably enhanced its reputation throughout the world. The articles are usually written in English—short, concise and full of new matter with a one-page summary in Chinese. At the present day, both this journal and the deliberations of the Chinese Physiological Society are outstanding features in the medical scientific life of China and the Orient(1257).

Of great importance to the medical scientific life of this country also is the *China Foundation for the Promotion of Education and Culture*, organized in June, 1925 by the Chinese Government to receive and use, for the furtherance of education and culture, the remaining payments of the Boxer Indemnity due to the United States.

All the fifteen members of the Board of Trustees of this Foundation were appointed by the Chinese Government; ten were Chinese, most of whom had had experience as teachers or administrators in modern educational and scientific institutions. The executive head was Mr. Fan Yuan-lien, formerly Minister of Education. A sum of approximately Mex. \$800,000 was available for use annually.

At its spring meeting in 1926, the China Foundation made grants to seven normal colleges for salaries of science teachers and for the purchase of additional equipment. Grants were also made to the scientific departments of seven other colleges or universities and to a few outstanding secondary schools. Subsidies were given to the National Geological Survey and the Science Society of China. A beautifully constructed and fitted Metropolitan Library was established at Peking costing over one million dollars and devoting special attention to a good reference collection of scientific books and journals.

Later on, the Foundation also awarded fellowships and prizes for scientific research(1258).

(1257) 1922 Annual Rep. of the China Med. Board, p. 23 and personal information from Dr. R. K. S. Lim (May 23, 1930).

(1258) Annual Rep. of the China Med. Board, Rockefeller Foundation, 1925, p. 2, 1926, p. 29; Nat. Med. J., 1929, p. 222.

One of the principal events, not only of the period now under review but in the history of medical education in China in general, was the opening of the new *Peking Union Medical College* on September 19, 1921. Speeches were made upon this solemn occasion by the Ministers of Foreign Affairs, Education and Interior, by Mr. John D. Rockefeller, Jr. as the representative of the Rockefeller Foundation which was responsible for the establishing and financing of this institution, by Mr. Roger S. Greene of the China Medical Board of the Rockefeller Foundation (1259), and by Dr. Henry S. Houghton, then Director of the College.

Mr. Rockefeller (1260) read a message from his father:—

My highest hopes are centered on the Peking Union Medical College which is about to open its doors. May all who enter, whether Faculty or students, be fired with the spirit of service and of sacrifice and may the institution become an ever-widening influence for the promotion of the physical, mental and spiritual well-being of the Chinese nation.

The formal dedication of the College was celebrated by a *Conference* lasting September 15-22 at which distinguished physicians, scientists and educationists from all parts of the world took part. These were:

From England	—Sir William Smyly (Physician-Accoucheur to the Queen), Dr. R. T. Leiper (the noted Parasitologist), Dr. Thomas Cochrane (Founder of the Union Medical College);
From France	—Dr. T. Tuffier (Professor of Surgery, Paris);
From America	—Dr. de Schweinitz (President of the American Medical Association and noted Ophthalmologist), Dr. William Welch (ex-Professor of Pathology, Johns Hopkins University and father of modern medicine in U.S.A.), Miss Florence Sabin (Professor of Histology, Johns Hopkins University), Dr. Clark (noted gynecologist), Dr. Francis Peabody (Harvard University), etc.;
From Philippines	—Dr. Antonio Sison (Professor of Medicine), Dr. Haughwout (Professor of Tropical Medicine);
From Japan	—Dr. S. Hata (of the Kitasato Institute), Dr. Shiga, Dr. Nagayo (Professor of Pathology, Tokio), Dr. M. Tsurumi (Head of Sanitary Department, Dairen);
From Java	—Dr. A. de Waart (Dean of the Medical School);
From Hongkong	—Sir William Brunyate (Vice-Chancellor of the University), Dr. Kenelm Digby (Professor of Surgery);
From China	—Dr. E. H. Hume (Yale Hunan Medical School, Changsha), Dr. S. M. Woo, Dr. Hsien Wu (Biochemist), Dr. C. C. Wang (Anatomist), and Dr. Wu Lien-teh.

The following principal addresses were read:—

Mornings—

- Sept. 15 De Schweinitz, Evolution of the Ocular Symptoms of Pituitary Body Disorders;
 16 Wu Lien-teh, Plague in the Orient with Special Reference to the Manchurian Outbreaks;

(1259) Ibidem, 1921, p. 236.

(1260) For the text of his address see ibidem, p. 226 & China Med. Jl., 1922, p. 33.

- 17 F. W. Peabody, Clinical Importance of the Vital Capacity of the Lungs;
- 19 R. T. Leiper, Problems of Parasitology in the Orient (not completed, as the speaker fell ill in the middle of his discourse);
- 20 Florence Sabin, The Origin of Blood Cells;
- 21 T. Tuffier, Osteomyelitis;
- 22 S. Hata, Present Status and Future of Chemotherapy.

Evenings—

- Sept. 15 E. H. Hume, Medical Education in China—A Survey and a Forecast;
- 16 G. E. Vincent, An Adventure in Public Health;
- 17 W. W. Peter, Methods of Visualizing Modern Health Ideas;
- 19 A. B. Macallum (McGill University), Biochemistry in Retrospect and Prospect;
- 20 S. S. Goldwater (Director Mt. Sinai Hospital, New York), The Search for the Ideal in Hospital Organisation;
- 21 Victor Heiser (International Health Board of the Rockefeller Foundation), Hookworm Control as a Promoter of Public Health Agencies;
- 22 Wm. Welch, The Advancement of Medicine and its Contribution to Human Welfare(1261).

The purposes of the institution as stated by the Trustees were:—

- 1. Primarily to give a medical education comparable with that provided by the best medical schools of the United States and Europe through an undergraduate curriculum; graduate training for laboratory workers, teachers, and clinical specialists; and short courses for physicians.
- 2. To afford opportunities for research, especially with reference to problems peculiar to the Far East.
- 3. Incidentally to extend a popular knowledge of modern medicine and public health.

The buildings of the College and the Hospital which is an integral part of the institution, are located on the property known as the Yü Wang Fu, which comprises approximately ten acres of land. The fourteen original buildings of the main group, erected at a total cost of Gold \$8,176,029(1262), still house the major activities of the medical school and school of nursing, but in addition there have been constructed from time to time other units until in 1936 there were some twenty-five in the group.

Since an excellent survey of the activities of the College was given in 1926 by Dr. W. S. Carter, Associate Director, Division of Medical Education of the Rockefeller Foundation and Acting Director of the College for 1925-1926(1263), we propose to analyse this, bringing, however, the information up-to-date:

The rapid development of science teaching and the better preparation of students for the study of medicine by the colleges of China

(1261) Nat. Med. JI., 1921, p. 210; Peter, China Med. JI., 1921, p. 486; ibidem, 1922, p. 9 (Program, List of Delegates and Abstract of Addresses).

(1262) For a detailed description see Report on the Dedication Ceremonies, Peking 1922, p. 14.

(1263) China Med. JI., 1926, p. 726.

(several of which were generously subsidized by the China Medical Board for the purpose), caused the College to discontinue its *Pre-medical School* at the close of the session of 1924-25. The students who had at that time completed the first and second years of the pre-medical course were transferred to Yenching University (a missionary undertaking at Peking and one of the schools supported by the Board).

At the time when the first class graduated in 1924 there were eleven departments of instruction in the Medical College. Between that date and 1936 there have been certain shifts in organisation, resulting at present in twelve teaching departments.

As to the *curriculum*, the college sessions were divided into three trimesters of eleven weeks each. As far as practicable the laboratory courses were concentrated in two trimesters so that more time was available for research by members of the staff and advanced students during the remainder of the year.

At first the pre-clinical subjects were completed during the first and second years, and the clinical instruction which began in the third trimester of the second year, was concentrated in the third and fourth years. In 1925-26, however, a revised curriculum was put into operation by giving correlated courses which began in the second trimester of the second year and continued more intensively during the third, so as to bring instruction in pre-medical subjects into closer relation with the clinical studies. Diseases of the blood, circulation, digestion, metabolism and the various infections were studied this way.

As the course of study stands in 1936, the amount of didactic work in the third and fourth years is reduced to a minimum, while the students spend the greater part of their time as clinical clerks under supervision in the wards and in the outpatient department dealing directly with patients. The work of the first four years contains approximately 4,000 hours. A fifth year as internes in the hospital or student demonstrators in one of the departments is required of all students before graduation. Diplomas from the Ministry of Education are granted after the satisfactory completion of the full five years of work, and also a diploma from the Regents of the University of the State of New York, from which the College received a provisional charter in 1916. This was made absolute in 1936.

From the very first there has been a definite interest in providing facilities for graduate training of various levels. Short intensive courses in various special fields have been given, and physicians have been welcomed for longer or shorter periods of study which formerly could not have been secured in China. Between the years 1921 and 1933 908 physicians, nurses and other technical personnel were

registered as graduate or departmental students in the institution. During the same period 191 persons other than College graduates served as house officers for periods averaging 18 months each. In the year 1935-36 there were 175 fellows, graduate or departmental students registered.

The facilities of the Medical School and School of Nursing were originally planned with classes of twenty-five students in view. The Medical School is now prepared to accept in the first year class forty students. Thirteen classes have been graduated numbering on June 12, 1936, 166 doctors and 87 nurses.

While it is impossible to provide details in regard to the numerous scientific publications of the College staff, it must be stated that since 1921, an annual volume of *Contributions from the Peking Union Medical College* has been issued comprising a rapidly increasing number of valuable papers.

One of the original policies of the trustees which has been consistently maintained, is the appointment as rapidly as circumstances might permit of Chinese to positions on the faculty and hospital staff. In 1925 the proportion of Chinese staff members was 48 per cent; in 1936 it had grown to 80 per cent.

A further noteworthy policy of the College has been the inviting from time to time of distinguished scientists as *Visiting Professors* who during their stay participate in the regular work of the Faculty and serve as an inspiration to staff and students. A list of these visiting teachers is herewith given:—

Session: Name and School of Visiting Professor:	Subject:
1921-22 A. B. Macallum, McGill University, Canada	Biochemistry, Physiology and Pharmacology;
F. W. Peabody, Harvard Medical School, U.S.A.	Clinical Medicine;
(Spring 1922) E. G. Brackett, Boston, U.S.A.	Orthopedic Surgery;
1922-23 Donald D. Van Slyke, Rockefeller Institute, U.S.A.	Biochemistry;
H. R. Slack, Johns Hopkins University, U.S.A.	Otolaryngology;
E. C. Dudley, Northwestern University, U.S.A.	Gynecology;
Reid Hunt, Harvard Medical School, U.S.A.	Pharmacology;
Ernst Fuchs, Vienna University	Ophthalmology;
1923-24 W. T. Councilman, Harvard Medical School, U.S.A.	Pathology;
W. W. Cort, Harvard Medical School, U.S.A.	Parasitology;
L. Emmet Holt, Columbia University, U.S.A.	Pediatrics;
C. U. Ariens Kappers, Central Dutch Institute of Brain Research, Amsterdam	Anatomy;
Adalbert Fuchs, Vienna	Ophthalmology;
1924-25 Robert K. S. Lim, Edinburgh University	Physiology;
Alfred E. Cohn, Rockefeller Institute, U.S.A.	Medicine;
1925-26 Mont Reid, University of Cincinnati, U.S.A.	Surgery;
1926-27 D. L. Edsall, Harvard Medical School, U.S.A.	Medicine;
1927-28 None	

Session:	Name and School of Visiting Professor:	Subject:
1928-29	Hilding Berglund, University of Minnesota, U.S.A.	Medicine;
1929-30	None	
1930-31	Emile F. Holman, Stanford University, U.S.A. A. Baird Hastings, University of Chicago, U.S.A.	Surgery; Medicine.
1931-32	Harold L. Amoss, Duke University Louise Pearce, Rockefeller Institute	Medicine; Dermatology & Syphilology;
1932-33	Frederic Wood Jones, University of Melbourne	Anatomy;
1935-36	C. N. Leach, Rockefeller Foundation C. C. McKhann, Harvard Medical School Franz Weidenreich, University of Chicago	Public Health; Paediatrics; Anthropology.

In 1922 arrangements were also made with the South Manchurian Medical College of Mukden for a yearly exchange of lecturers between that institution and the Peking Union Medical College. Accordingly in 1922, Dr. Y. Kuno, Professor of Physiology at the South Manchurian Medical College, gave a series of lectures on the physiology of the pericardium, while Dr. C. W. Young lectured in Mukden on the results of his recent studies of Kala-azar. In 1923, Professor T. Masuda delivered in Peking a series of lectures on recent Japanese work on beriberi, while Professor Cort lectured at Mukden upon his hookworm studies.

In September, 1921, Dr. Henry S. Houghton, formerly Dean of the Harvard Medical School of China, was appointed Director of the College in place of Dr. McLean, who devoted himself entirely to the Department of Medicine. Dr. Richard M. Pearce, Director of the Division of Medical Education of the Rockefeller Foundation was in residence at Peking during the year 1921-22 in an advisory capacity and acted, during an absence of Dr. Houghton, as Director.

In 1922, an *Advisory Committee* of eight Chinese gentlemen was established to interpret to the people the purposes and policies of the institution as well as to advise the officers in matters requiring special knowledge of local conditions. It was comprised of:—

Messrs. Sun Pao chi	Director General of Customs (Chairman);
Hsiung Hsi-ling	Formerly Minister of Finance and Premier;
Duke Tze Tsan-hsi	In charge of Manchu relief enterprises;
Mr. Tsai Yuan-p'ei	Chancellor of National University of Peking;
Surgeon-General Chuan Shao-ching	Formerly Director of the Army Medical College;
Admiral Tsai Ting-kan	Assistant Director-General of Customs;
Mr. Chang Po-ling	President of Nankai University;
Mr. Chou Yi-ch'un	Formerly President of Tsing Hua College.

In the year 1923, special funds were provided for a field study of *Kala-azar* under Dr. C. W. Young, assisted by the entomologist, Dr. Marshall Hertig. The studies were carried on until 1928. Unfortunately, Dr. Young died on January 25, 1929, while at New York.

In 1924 a Chinese member of the department of surgery acted as honorary medical adviser to one of the units of the Chinese army at Peking. He gave regular instruction to the military surgeons and so improved the service, that successful operations were performed in the small military hospital with strict observance of aseptic technique. At the request of the commanding officer, an antenatal clinic was established in the camp, while nearly a hundred officers and men volunteered their services as blood donors for cases requiring transfusion.

Toward the end of the year 1925, a *new construction program* was authorized for an expenditure of Gold \$750,000 over a period of four years, mainly for an extension of the out-patients department and a dormitory for women students, nurses, etc.

An outstanding event of the year following (1926), was the appointment of Dr. J. Heng Liu, formerly associate of surgery, as medical superintendent of the hospital.

Many changes took place in the year 1927. Dr. Houghton announced his resignation, to take effect early in 1928, and Mr. Roger S. Greene, Vice-president of the Rockefeller Foundation for the Far East, was appointed Acting Director in his place. Several of the foreign departmental heads likewise resigned to accept posts in the United States.

The development of the *Chinese staff* was progressing well. Dr. Fu-chun Yen, formerly president of the Hsiang-Ya Medical College, was appointed vice-director and member ex-officio of the medical faculty, its executive committee, and of the Administrative Council for 1927-28. Dr. Jui-hua Liu became acting head of the department of otolaryngology for the same period during the absence of Dr. Dunlap on furlough. Dr. Robert Kho-seng Lim was made full professor and head of the department of physiology. Dr. Chong-eang Lim (C. E. Lim) was appointed assistant professor of bacteriology and chief of that service. Dr. J. Heng Liu, who had completed a very successful year as medical superintendent of the hospital, and Dr. Hsien Wu, head of the department of biochemistry, remained at their posts. Three leading Chinese members of the college left: Dr. T. M. Li, former associate professor of ophthalmology, took up private practice in Shanghai and at the same time, served as visiting professor at St. Luke's Hospital; Dr. George Y. Char became medical superintendent of the Central Hospital while Dr. Ta-chung Yang, formerly assistant in surgery, was appointed surgeon-in-chief to the Methodist Hospital in Peking. The two last-mentioned remained in part-time connection with the College (1264).

(1264) Dr. S. P. Chen, Medical Director of the Government Isolation Hospital had been appointed honorary lecturer in 1922.

During the year 1928, steps were taken towards the steadily-sought goal of making the college a Chinese institution: The Rockefeller Foundation waived its right to appoint a majority of the Board of Trustees, and, with the consent of other organizations which previously appointed representatives, the Board of Trustees was made self-perpetuating. To this *new China Medical Board, Incorporated*, which was quite independent of the Rockefeller Foundation, an endowment of G.\$12,000,000 was turned over for the maintenance of the Peiping Union Medical College. The proviso was made that these funds might be used for other educational institutions in China or the United States, should it be considered inadvisable, at any time in the future, to continue the present arrangement. The land, buildings and equipment held by the Foundation were also transferred to the new Board who leased the property to the College. Dr. Y. T. Tsur was elected as chairman and has held that office since.

As a result of these changes, the College was registered by the Ministry of Education in May, 1930.

In June 1935 Mr. Roger S. Greene resigned. Since that date the administration has been carried on by a committee of three professors composed of Dr. J. Preston Maxwell, Chairman, Dr. R. K. S. Lim and Dr. Wu Hsien(1265).

There has sometimes been some confusion in the fact that the original China Medical Board was a subsidiary organ of the Rockefeller Foundation, while the incorporated board is an independent institution. The former organization went out of existence when the new one was set up, but during the years of its activity it was the agent of the Rockefeller Foundation in assisting many other medical schools, colleges, and hospitals in China. A short summary of these as kindly furnished by Mr. Roger S. Greene follows:—

The principal institutions in China which have been aided to a greater or lesser extent by the China Medical Board and the Rockefeller Foundation are the following:—

Medical Schools:

Hsiang-Ya Medical College;
National Central University Medical College;

Small grants have been made to a number of other schools (in some cases only by fellowships for a few of their teachers) as follows:—

National Medical College, Peiping;
South Manchuria Medical College;
Mukden Medical College;
St. Johns University Medical School;
School of Medicine of Hongkong University (directly by the Rockefeller Foundation).

(1265) The above information is mainly culled from the annual reports of the China Medical Board and the Rockefeller Foundation. See also *China Med. Jl.*, 1929, p. 649 (Obituary for Dr. Young); *Nat. Med. Jl.*, 1929, p. 506, 1930, p. 125.

Universities and Colleges for their departments of Physics, Chemistry and Biology:

Nankai University, Tientsin;
Southeastern (National Central) University, Nanking;
Tsing Hua University, Peiping;
Yenching University, Peiping;
College of Yale-in-China, Changsha;
Nanking University;
Soochow University;
Shanghai College;
St. John's University, Shanghai;
Fukien Christian University, Foochow;
Lingnan University, Canton.

Hospitals:

The Board made grants for additional personnel and other current expenses and in some cases for new buildings and equipment to a large number of hospitals, mainly those established by missions. No new grants of this nature are being made by the Rockefeller Foundation.

Among the largest contributions were those made to the following institutions:—

Wuhu General Hospital;	Nanking University Hospital;
Soochow Hospital;	Presbyterian Hospital, Paoting-fu;
Red Cross General Hospital, Shanghai;	American Board Hospital, Fenchowfu, Shansi.
Huchow Union Hospital;	

Fellowships:

In connection with aid to schools and hospitals, a large number of fellowships were given to teachers, doctors, nurses, and other workers, some for study abroad, and some for study at the Peiping Union Medical College or other institutions.

Grants:

Grants were made to the China Medical Association and the National Medical Association of China toward their administrative expenses and their work in translation and medical terminology.

While thus far the Peiping Union Medical College has been the sole beneficiary of the China Medical Board, Inc., the Rockefeller Foundation continues to give generous support to public health and educational institutions in China. As can be gathered from the 1935 report of the Foundation emphasis is now towards cooperation with efforts in the field of rural reconstruction. The appropriations under the China program during 1935 were as follows:—

North China Program

Chinese Mass Education Movement	\$ 150,000
Nankai University, Inst. of Economics	37,500
Yenching University, Dept. of Public Affairs and Coll. of Nat. Sciences	77,325

Nanking Public Health and Medical Program

National Health Administration	\$ 87,500
Commission on Medical Education	21,250

Nanking Agricultural Program

University of Nanking, Dept. of Agric.	U.S.\$ 5,500
Econ. and Dept. of Science	\$ 72,500
National Central University, Animal husbandry and vet. prevent. med.	34,600
National Agric. Research Bureau. Insect control work	34,300
<i>Fellowships.</i>	U.S.\$ 37,500

Grants in Aid

Research and developmental aid grants	10,000
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Most praiseworthy was also the generous assistance afforded by the Rockefeller Foundation to carry on the palaeontological research at Chou Kou Tien in the Western Hills near Peking which led to the detection of a well-preserved skull and other remnants of *Sinanthropus Pekinensis* under the leadership of Professor Davidson Black of the Union Medical College.

To conclude the survey of educational activities at Peiping, it must be mentioned that the former Peking Special Medical College became the *Medical Department of the National University of Peiping* in August, 1927, with Professor San Liu-hsi as first dean. In 1928, the new Government allotted to the College the site of the Audit Office (*Hsing-chi Yuan*—審計院) for a hospital, and, through the Municipality, part of the property of General Chang Ching-yao was obtained for use as a branch of the College.

Faber(1931), while praising the keen well-trained teachers, thought the College lacking in other respects. In his opinion, the pre-medical course (which was given during the first two years of the 5 years' curriculum according to the German scheme) should be transferred to the Science Department of the University. Owing to lack of funds, only an out-patients department had been opened on the new site which was too far from the College. However, since it had space for many new buildings, the best plan would be to give up the present inadequate quarters and concentrate the work in proper buildings on the new site.

The College, which in 1929-30 had an enrolment of 240 students and a teaching staff of over 30 persons under Dean Dr. Hsu Sung-ming, graduated from 1917-1929 a total of 320 pupils, both men and women. From a report published in 1935 it can be gathered that the College now possesses adequate laboratory facilities for groups of about 30 students corresponding to the number of pupils admitted every year. 150 beds for teaching are available in the clinics of the hospital. Since 1932 a 6-year curriculum has been adopted(1266).

(1266) Faber, Report on Medical Schools in China, League of Nations Health Organisation, 1931; 1930 Directory of the National Medical Association, Peiping, p. 14; Nat. Med. Jl., 1929, p. 507; Chin. Med. Jl., 1935, p. 1017.

A Provincial Medical School, called the *Hopei University Medical College*, was opened at *Paotingfu* in 1921. Up to 1929-30 three classes had been graduated; it possessed at that time a staff of 19 teachers and an enrolment of 194 students. The hospital connected with the school had an adequate medical and nursing staff (8 and 18 respectively), but accommodation for only 30 in-patients (1267).

Turning to the educational history of *Canton*, we will continue first with the *Kung Yee*. As noted, the 51 students of the Government Medical School were turned over to it in 1921, their fees being defrayed by the Provincial treasury. In the same year, important changes were made in the policy of the school:

- (1) It was resolved to invite the best teachers available, irrespective of nationality;
- (2) The Faculty Executive was re-instated;
- (3) Women students (at first six in number) were re-admitted to be educated together with the men in combined classes;
- (4) The curriculum was extended to six years, comprising a pre-medical course, four years of medical study, and one year of internship in a recognized hospital.

The growth of the school necessitated additional accommodation for students; a new dormitory with room for 100 students was built and became available at the end of 1921. A small dormitory for nurses was likewise erected.

Dr. Wong Hang-tong resigned and Dr. Lai Dok was appointed Interim Dean while Dr. R. M. Ross took charge of the teaching of psychiatry in place of Dr. Selden, then on home leave. The hospital under Dr. Todd continued to prosper, turning over part of its earnings to the School.

In the spring of 1920, the Board prevailed upon Dr. Lee Shu-fan, then a leading practitioner in Hongkong, to proceed to America and solicit funds from the Chinese. After a most successful campaign and a term of study in Europe, Dr. Lee returned in the summer of 1922 with a sum well over \$100,000. It was thus possible not only to free the Society from all liabilities but to formulate new plans, including construction of a new wing to the hospital at a cost of \$40,000.

The unsettled political conditions of the year 1923 seriously hampered the work of the school. New subscriptions were unobtainable while the hospital was called upon to care for a daily average of over 300 wounded and sick soldiers (2,600 in all for whom the Government paid eventually, not in cash, but with a tract of land comprising 41 Chinese mow).

In spite of these difficulties which necessitated a loan from a bank, notable progress was made. Dr. Lee Shu-fan, unselfishly giving

(1267) 1930 Directory of the Nat. Med. Assoc., Med. Institutions, pp. 5, 50.

up his lucrative practice in Hongkong, assumed the Deanship, while Dr. Luk Kiang-fai, whose full-time services had been secured, was appointed Proctor in succession to Dr. Lai Dok (resigned).

For some years, the Kung Yee Society had aimed at getting the college work recognized by the Ministry of Education as being of university standard. This was made possible by a provision whereby a college with a single faculty could assume the name of University, provided its standard be of required grade.

In pursuance of these plans, a commission headed by Dr. Lee Shu-fan was appointed which brought its labours to a successful conclusion in September, 1923. The College was provisionally registered by the Government with university standard and assumed the name of *Kung Yee University Medical School*. The faculty executive was replaced by the Senate. Dr. Lee Shu-fan was appointed President of the institution, Dr. Luk Kiang-fai Dean and Proctor.

A new curriculum was adopted, requiring

1. Middle school graduation before admission to the Entrance Examination;
2. Two years of pre-medical studies and four of medical ones for graduation as M.B., B.S;
3. Two years of internship or five in private practice in addition to special examinations for the degrees of M.D. or M.S.

When the school opened on September 15, the majority of old students were admitted into the new curriculum but was required to make good any discrepancy between it and the old.

To make possible the amplified practical anatomical work required by the new plan, the Anatomy building was properly remodelled and provision made, with the assistance of Procurator-General H.Y. Loo, to obtain all unclaimed dead bodies from the prison.

The new University School was sorely tried in 1924 through a students' strike which was, however, brought to a conclusion through the firm action of the Board and Senate. In spite of these difficulties the work grew. The Faculty had increased to 36 members, 19 of whom were on full-time appointment. In 1924 the post of a full-time professor of Anatomy was created and Dr. E. W. Kirk of the New Zealand Presbyterian Mission was lent for the purpose. At the same time Dr. Kirk was installed as Dean. A further innovation was the appointment of Dr. Wong Hung-yan as full-time Professor of Physiology. With the help of the Reformed Presbyterian Mission the services of Dr. J.M. Wright as Professor of Pathology and Bacteriology were secured.

The interesting history of the school concludes with the statement that in 1925-26, 189 students were in attendance, of whom 29 were women. The total number of graduates had reached 252.

In July, 1925(1268), the Kung Yee institutions were taken over by the Government as part of its University and reopened in 1927 as the Medical Department of the 1st Chung San University (afterwards called the *Sun Yat-sen University Medical School*). Dr. Faber gave the following favourable report on the institution:—

The institute for theoretical medicine seems to be satisfactory. The first Sun Yat-sen hospital of 170 beds is directly connected with the medical school and there is a plan to enlarge it by 100 beds. In the city at a certain distance from the school there is an out-patient department and a small second Sun Yat-sen hospital affiliated with the college.

When the medical college was organised in 1927, a certain number of professors from Germany (7) were appointed as teachers in the college and they organised the institutes and teaching. There is now the difficulty, especially in the first years of their course, the students have in understanding the German language. The lectures in Anatomy and Physiology are translated into Chinese.

The curriculum comprises a two year premedical course followed by three years of medical study and one devoted to internship. According to the 1935 history of the National Sun Yat-sen University nine subsidiary institutions are attached to the college:—

- (a) Five *Institutes* (Pathology, Bacteriology, Pharmacology, Anatomy and Physiology).
- (b) Two *Subsidiary Hospitals*.
- (c) A *School of Nursing*, established many years ago by the Public Hospital of Kwangtung University and affiliated with the first subsidiary hospital in 1926. The original curriculum of three years has now been lengthened to 3½ years. Sixty three nurses have graduated since affiliation of the school.
- (d) A *School of Midwifery*, established in 1933, offering a two-year course
 A. 65 students(1269).

The *Hackett Medical College*, the history of which has been brought up to the year 1926, managed to keep open during the political changes of the following years. A *School of Pharmacy* was added and received a surprising number of applicants.

In 1926 hopes were entertained that the Kung Yee Medical School in affiliation with the Canton Hospital (whose staff had for years given clinical teaching to the students), the Hackett Medical School and the John G. Kerr Hospital for the Insane, might fill the pressing need for a really first class medical school. These plans were frustrated by political events, but were resumed in 1929 when an understanding was arrived at between the Lingnan University regents and the governing board of the Hackett Medical College to make Lingnan one of the largest co-educational schools in China. This program was de-

(1268) China Med. Jl. 1925, p. 853; "A Short History of the National Sun Yat-sen University," Canton 1935, p. 1.

(1269) See in addition to Faber's Report and the 1935 History: Thomson, China Med. Jl., 1926, p. 794, China Year-Book, 1929-1930; Chin. Med. Jl. 1935, p. 1015.

finitely inaugurated in September, 1929, when the Canton Missionary Hospital, which was to form the third link of this union, was formally re-opened under the auspices of the Lingnan University (see later).

The Hackett Medical College in the meanwhile carried on successfully. A report published in August, 1929, stated that ten students were graduated after the fourth year of medical study and had begun to serve as internes in the David Gregg or other hospitals, while the degree of M.D. was awarded to ten women who had concluded their internship. In July 1931, it was announced that Dr. Ross Wong (a graduate of Queen's), professor of surgery and anatomy, had been elected President of the College to succeed Dr. J. Allen Hofmann (who was due on furlough and died in 1933).

Statistics available in 1930-31 spoke of a staff of 20 Chinese and 14 foreign teachers and a total of 187 graduates. In 1930 there were 58 students in the Medical school, 52 in that of Nursing and 12 studying pharmacy. The College, which was registered by the Ministry of Education in 1932, reported in 1935 a total of about 240 graduates.

The first definite steps in carrying out the affiliation scheme were taken in 1933. In the autumn of the same year a beginning was made with the admission of male pupils (1270).

It has been previously stated that the Woman's Medical School of Soochow was moved in 1921 to *Shanghai* in order that it might unite with the Margaret Williamson Hospital and thus become the nucleus of a larger institution. In 1924 the *Woman's Christian Medical College*, Shanghai, was incorporated under the laws of the District of Columbia, U.S.A., and the first class of five students commenced in September of the same year, when the Bennett Memorial Laboratories became available. The curriculum provided for a medical course of four years and instruction was given in English.

The school, which in 1925 had a staff of eight full-time physicians, three on half-time, two exchange professors from St. John's Medical School, one half-time instructor in Histology and Embryology and three full-time assistants graduated in China, possessed 30 teachers in 1928-29, most of whom served on a part-time basis. The enrolment, according to Faber, was 70. In order to obtain the M.D. degree provided by the charter, the students had to spend one year as internes in an approved hospital (1271).

(1270) Thomson, I.C. (1300), *China Med. Jl.*, 1927, p. 667, 1930, pp. 680, 961, 1014; *Nat. Med. Jl.*, 1929, p. 505; Circular Letter of Dr. Cadbury, Jan. 12, 1930; Shields, I.C., p. 365; *Chin. Med. Jl.*, 1933, p. 1057, 1935, p. 1006.—Dr. Li Ting-an's Canton Health Report (*Nat. Med. Jl.*, 1925, p. 364) mentions the existence of the Leung Yuet Medical College. No further information was forthcoming in regard to this institution.

(1271) *China Med. Jl.*, 1926, p. 756, 1927, p. 666; 1930 Directory of the Nat. Med. Assoc., Shanghai, p. 40.

A private medical school founded in Shanghai, August, 1924, was called the Medical Training School (醫學傳習所); later, it changed to the Oriental Medical Academy (南洋醫學專門學校), then the Nanyang Medical Academy (亞東醫學專門學校), finally assumed its present name of *Nanyang Yi Hsueh Yuen* (南洋醫學院) when registered by the Ministry of Education. It was controlled by a Board of Directors and was well attended so that up to 1930, about ten classes of students had been graduated (1272).

In 1926 another private medical school was founded, called the *Tung Nan Medical School*, which owes its existence mainly to the present Dean, Kuo Yuan-chi (郭元琦). It is controlled by a Board of Trustees organised in 1927. It was also well attended so that in 1929-30, it had an enrolment of more than 280 students (both men and women) and a staff of over 30 members. A hospital of 40 beds was connected with the institution, but, according to Faber, only 15 of these were available for teaching purposes.

In general, Dr. Faber was not favourably impressed with the two just-mentioned schools or with the Tung Teh college discussed in the preceding chapter and noted with satisfaction that the Government had decided upon a special investigation.

He stated that all three colleges had the German plan of teaching, with two pre-medical and three clinical years. While class rooms were available, he considered the laboratory facilities inadequate. One of the schools (Nanyang), had no hospital of its own while those connected with the others seemed insufficient and unsuitable to him. The need for reform seemed the more necessary to Dr. Faber as the three schools, together, had graduated nearly 200 doctors during 1929-30.

According to a report published in 1934 great improvements were made in the Tung Nan Medical School. It now possessed 10 laboratories, each with a capacity for 30 students, while 200 beds had been made available for clinical teaching. 384 students were in attendance; the total number of graduates had reached 459. Progress on a more moderate scale was also made by the Tung Teh College which had in 1934 206 students to whom 3 laboratories, each with a capacity of 10, and 50 clinical beds were available. A total of 199 graduates was recorded at the time. In 1935 the Ministry of Education, approving of the reorganization of the two schools, officially registered them (1273).

To raise the standard of medical education, the Government ordered the establishment of a college of medicine in Shanghai as

(1272) Ibidem, p. 31.

(1273) Ibidem, p. 29; Chin. Med. J., 1935, pp. 1025-1026, 1047.

a successor to the Kiangsu Provincial Medical School in Soochow. This new school was opened in October, 1927 and as it formed an integral part of the Nanking University, it was called the *College of Medicine, National Central University*. It was established at Woosung where laboratories and class rooms were installed in the fine spacious building of the former Law Academy. A separate building was provided for the anatomy department, while a dormitory for 200 students and a large campus were available. The nucleus of the teaching staff was formed by the personnel of the Hunan-Yale Medical College under the able leadership of F. C. Yen.

Since August, 1928, the *Chinese Red Cross Hospital* has become a full teaching establishment with the faculty of the College in charge of all professional duties. With a staff of 22 doctors, mostly full-time, the hospital was divided into ten different services. The number of beds was increased to 200 and an out-patient department with a daily attendance of 100 maintained.

The original budget of the College was \$250,000 of which the Government share was \$150,000 while grants were received from the China Medical Board and the China Foundation.

In 1928-29, the College possessed 29 instructors above the rank of assistants, 11 of whom served on part-time basis. The curriculum was one of 4 years (after two years pre-medical teaching in the Department of Science of the National University in Nanking) plus one year for internship.

Dr. Faber in his report found the laboratories in Woosung, though well-equipped, rather small. The hospital was also not fully suited for teaching purposes. A greater drawback still was the separation of the hospital from the theoretical institutes in Woosung. Nevertheless, in Dr. Faber's opinion,

the teaching in this school is very good. The main reason is the excellent staff of Chinese and foreign teachers, the true scientific spirit in all the work and the interest taken in the hospital in providing the students with good clinical training. . . . It certainly deserves to be able to continue its valuable work in better conditions.

In 1932 the College was again separated from the National Central University and assumed its present name of *National Medical College of Shanghai*. In the same year the school suffered a grievous loss, its plant in Woosung being destroyed during the Sino-Japanese conflict. The college was removed into a building in the immediate vicinity of the Red Cross Hospital where the work was vigorously carried on. The necessity to move from these temporary cramped quarters into better premises was acutely felt and the college authorities left no

stone unturned to bring about such a change. It was first planned to erect new college and hospital buildings on the Pioneer Field in the French Concession which had been generously donated to the College by the Rockefeller Foundation but this plan was given up in favour of the more ambitious project of a *Medical Centre* to be established on Chinese territory in the immediate vicinity of the French Concession at the termination of Route Ghisi.

A large group of public-spirited men united with the College authorities under Dr. F. C. Yen to carry out this scheme. A Board of Directors was formed which was headed by Dr. H. H. Kung, Minister of Finance with Dr. J. Heng Liu, Dr. Chu Min-yi, Secretary General of the Executive Yuan, Dr. Sun Fo, President of the Legislative Yuan, Mayor Wu Te-chen and many other leaders as members.

The ground for the medical centre was bought with the proceeds obtained through selling the Pioneer field. It was proposed to erect besides residences for the staff eight large buildings including (1) The Chung San Memorial Hospital for 500 beds, one of the sections of which was donated by Sir Elly Kadoorie; (2) Medical College for 300 students, erected with funds provided by the Government and in part by the Trustees of the British Boxer Indemnity funds; (3) School of Pharmacy, donated as a memorial to the late Mr. Hong Song-mu, formerly general manager of the International Dispensary who was killed during the Sino-Japanese hostilities; (4) School of Nursing, given in memory of the late Mr. Sze Liang-tsi, a newspaper magnate killed by gunmen; (5) Public Health Institute where public health training will be given to all students. It is hoped to open the centre in 1936 and it is planned to hold there the next conference of the Chinese Medical Association scheduled for April, 1937 (1274).

The *Pennsylvania St. John's Medical School* partly suspended its work in 1927, carrying on the clinical training of students in their later years. However, St. John's University having closed its Collegiate Department, it was impossible to offer courses for the first and second year medical students. An effort was made to secure the assistance of the Yale Board of Trustees in America and an emergency grant from the Rockefeller Foundation. When these efforts failed, an attempt was made to form a union with the Central University Medical College which proposed to undertake the training of the first and second year classes, while St. Johns University should be responsible for the clinical classes. A joint Board of Managers was formed, four

(1274) Ibid., pp. 22, 62, Nat. Med. Jl., 1928, p. 258; China Year Book 1929-1930; Faber's Report; Chin. Med. Jl., 1935, pp. 603, 1016; Shanghai Medical News, 1936, No. 23 and personal information.

members of which were appointed by the Central University, and four, by St. John's (1275).

As we have seen, the Central University Medical College finally made arrangements for clinical teaching in the Red Cross Hospital, while St. John's Medical School continued to carry on on its own, admitting new students to a first class in autumn, 1929 (1276).

The *Tung-chi (German) Medical School* was reorganised in 1921 along with the Tung-chi Technical College at Woosung and a middle school which prepared students for both higher institutions. The whole work was under a committee appointed by the Board of Education at Peking and was composed entirely of Chinese with Mr. Chen An-fu, Secretary-General of the Kiangsu Educational Association as Chairman. The Executive (Arbeitsausschuss) of the medical school was composed of Mr. S. D. Yuan (Government representative and Director of the Tung-chi school), Dr. Ed. Birt (Dean of Medical School), Dr. G. Blumenstock (representative of the German Medical Association), two Chinese and two German lay-members.

The teaching staff consisted partly of members of the German Medical Association, who gave their services free for clinical teaching and partly of German teachers paid by the school and serving on a full-time basis. Instruction continued to be in German with a curriculum of two pre-clinical and three clinical years.

An important change took place in 1923 when the pre-clinical work was transferred to Woosung so that more room became available in the Paulun hospital for clinical work.

In October 1925, the *Tung-chi Medical Monthly* (*Tung-chi Medizinische Wochenschrift* 同濟醫學月刊) first appeared, edited, with the assistance of Dr. Brauer (Hamburg), by the Faculty of the school. The journal, which continues to appear, contains articles by members of the faculty and contributions from medical authorities in Germany. All are published in both German and Chinese.

In 1926-27, a new five-storey building was erected, bringing the maximum capacity of the Paulun Hospital to about 300 beds. At the

(1275) This was composed of Dr. E. S. Tyau, Acting Dean of St. John's; H. H. Chao, China Christian Educational Association; K. P. Chen, Mng. Director, Shanghai Commercial and Savings Bank; F. C. Yen, and V. T. Loh, Actg. Dean, Central University Medical College; C. V. Yui; C. L. Kao, Editor, Nation. Med. Jl., S. C. Chu, Manager, Transportation Service; Y. J. Cieh, Shanghai Municipal Council; T. K. M. Siao, Business Manager, Nation. Med. Association; O. S. Lieu, Manager, Kailan Mining Association; W. S. New, President, National Med. Association; A. W. Tucker, Supt., St. Luke's Hospital; J. C. McCracken, Professor of Surgery, St. John's.

(1276) *China Med. Jl.*, 1927, pp. 665, 873; *Nat. Med. Jl.*, 1929, p. 507.—According to Shields (l.c., p. 365) instruction was given in 1929-30 to 37 students by 14 Chinese and 11 foreign teachers. The total number of graduates was 99.

same time, more room was created for the pathological and pharmacological institutes which were still housed in the hospital.

No change took place in school and faculty when Shanghai was taken over by the new Government, except that the old committee was dissolved and a new Director appointed in the person of Mr. D. S. Chang, who was succeeded in 1929—first, by General Chang Chun and then, by Dr. Shu Hua-hu.

Faber when dealing with the Tung-chi School, deplored, as in the case of the Central University School, the division between the theoretical part at Woosung and the clinical part at Shanghai. At Woosung, chemistry and physics continued to be taught in the technical school, but newly-built and well-equipped institutes for anatomy and physiology had recently become available, both directed by full-time German professors.

Dr. Faber was not so pleased with the arrangements at Shanghai. The number of patients available for clinical teaching seemed to him somewhat limited (about 80) and he objected to teaching solely by clinical lectures, so that the students were admitted to work in the hospital after graduation only. The institutes for pathology and pharmacology seemed small. Thus the school seemed very much in need of a good hospital of its own.

According to statistics published early in 1930, the school had graduated a total of over 170 doctors; the teaching staff was about 17 and the enrolment about 200 (1277).

Resuming the history of the *School of Medicine, Shantung Christian University*, (later on called *Cheloo University*), reference must be made to the granting of a charter to the University by act of the Parliament of Canada in 1924. In July, 1925, a Board of Governors was organised in New York.

A sad event of the same year (1925) was the death of the veteran leader, Dr. James Boyd Neal. Elected President of the University in 1919, he had been compelled by an illness of long standing to return to America in 1922, where he died at the age of seventy years.

A description given of the school in 1926 is herewith quoted:—

The present plant consists of a three-storey central block with east and west laboratory wings. In addition to class-rooms and Assembly Hall, the building contains large well-lighted laboratories devoted to Biological Chemistry, Pharmacy and Pharmacology, Histology and Embryology, Pathology and Bacteriology, and the Department of Anatomy. A special laboratory is set apart for the routine examination of patients in the hospital. The medical branch of the University Library is lodged in the central medical building. The Laboratory of Physiology and the offices of the Department of Preventive Medicine are accommodated on the main University campus outside the suburb.

(1277) Reports of the School, passim; 1930 Directory of the Nat. Med. Assoc., Shanghai, p. 26; Faber's Report.

Adjoining the School of Medicine is the University Hospital and Dispensary, with a frontage of 400 feet. The Hospital, which was erected in 1915, provides accommodation for 105 patients. Funds are now in hand for a new hospital of 200 beds. When this is completed, the present hospital building will be used for additional out-patient accommodation.

The teaching in the Medical School is done in Chinese. English is taught as a subject and students are encouraged to make use of English literature. Two years of pre-medical work of college grade are required before students are allowed to stand for the entrance examinations to the School of Medicine. The medical course consists of five years, the last of which is almost entirely clinical. The standards conform as nearly as possible to the standards of similar medical schools in the West. On completion of the five year course of study, students who successfully pass the examinations are awarded the degree of M.B.

The information given in regard to the staff may be compared with that available for the years 1918, 1930 and 1935 thus:—

Year:	Foreigners:	Chinese:	Total:
1918	13	2	15
1926	18	7	25
1930	16	13	29
1935	14	22	36

The 1926 report stated that the majority of members of the Publication Committee of the China Medical Association was on the Faculty and three rooms of the School of Medicine were set aside for the use of this committee.

The School suffered comparatively little during the troublous time of 1927, the Chinese members of the Faculty successfully carrying on the work. A strike in 1930 was more threatening but this was also settled soon.

A useful undertaking was the opening of a *School of Pharmacy* in autumn, 1929. As W. P. Pailing, Ph. C., M.P.S., B.D., pointed out, for seventeen years it had been his ideal to have such an institution, but up to 1929, it was only possible to take men in twos and threes and train them. Between 1923 and 1929, some 16 or 17 were thus educated, eleven of whom were graduated.

Though there were 83 applications, only 12 men were admitted in 1929 and given a two years' course similar to that for the British Minor examination. Afterwards groups of about 20 pupils (both men and women) were admitted in alternate years, the total of graduates up to 1935 being 54.

The Medical School reported in 1933 a total of 271 graduates of whom 12 had died. Of the remaining 259, 101 were serving in mission hospitals (1278).

(1278) China Med. Jl., 1924, p. 957, Shields, 1926, p. 759, 1927, p. 665, 1929, p. 747, 1930, pp. 170, 272, 393, 1931, pp. 167, 356, 444; Nat. Med. Jl., 1925, p. 148; Chin. Med. Jl. 1935, pp. 65, 1002, 1035.

A new and well-planned building for the *Hangchow Medical School* was opened in 1924, containing class rooms, well equipped laboratories and—on the third floor—dormitories for 75 students.

The work of the school came to an end in 1927 (one year after Dr. Main's retirement) when the building was taken over by the provincial authorities(1279).

A medical school, in connection with the Japanese hospital at *Tsingtao*, was opened in 1924. It offered a four years' course to high school graduates. The expenses were to be covered, partly by the income of the hospital, and partly by a subsidy amounting to Yen 140,000 per annum from the Japanese Government(1280).

Reports on the *West China Union University* at *Chengtzu* were given by Dr. E. C. Wilford in 1924 and by Dr. W. R. Morse in 1926. From them, we learn that an excellent new structure, the Atherton Building for Biology and Preventive Medicine, was finished in April, 1924, and housed, for the time being, most of the theoretical branches. Construction of a new Medical-Dental building was commenced in 1925 to accommodate all except the departments for biology and hygiene.

The three hospitals available for clinical teaching were:—

- (a) The Canadian Methodist Hospital for Men, a well-equipped institution with 150 beds;
- (b) The Hospital for Women and Children maintained by the Women's Board of the same mission with accommodation for 70 patients;
- (c) The Methodist Episcopal Mission Hospital, formerly a general hospital with 50 beds, had by 1926, ceased to admit in-patients. It continued to have a large out-patient clinic and it was proposed to use this for teaching purposes.

The Faculty comprised in 1924, twenty-three members, while ten more instructors taught scientific subjects in the pre-medical course. Chinese members of the Faculty were the two pharmacists, one of whom, Mr. S. Y. Pu, taught Pharmacy; the other, Mr. K. C. Chi, *Materia Medica*. Dr. K. H. Chien, a graduate of the medical school, had recently joined the department of Anatomy.

In 1926 there was a foreign staff consisting of ten full-time and ten part-time teachers, with more to come. Two full-time and two part-time Chinese instructors were employed and their number was soon to be augmented by two more.

Members of the Faculty of Dentistry, other than those teaching subjects under the Medical or other Faculties, numbered eight.

The curriculum had been lengthened and divided into two pre-medical and five medical years, the same length of study being re-

(1279) *Ibidem*, 1924, p. 400; *China Med. Jl.*, 1927, p. 666; Kingston de Gruche, l.c., p. 194.

(1280) *Japan. Med. World*, 1924, p. 274 and *China Med. Jl.*, 1924, p. 1059.

quired for students of dentistry. During the pre-medical and first two years of the medical course proper, the students received instruction at the University, then at the hospitals in the city, two miles distant from it. The attendance was 60 in 1924 (with 38 in the pre-medical course) and rose to 73 (with 34 pre-medical students) in 1926. The total number of graduates up to then was 15.

The dental school was attended in 1925-26 by eleven students in dentistry proper and fourteen in the pre-dental course. It was hoped to graduate the first class in 1927.

The 1926 report mentions the existence of a Military Medical School which employed, besides a French naval surgeon and a pharmacist 3-5 Chinese teachers, some of them trained in the University school, others in Japan. A class was taken every fourth year.

The missionary school suffered comparatively little in 1927 because the Senate of the University, the majority of which was Chinese, decided to re-open after the evacuation of the foreigners with the limited Faculty available.

According to the latest information, in 1935 the school had an enrolment of 79 medical and 41 dental students, while 74 pupils attended the pre-medical courses in the University. The Faculty comprised 14 Chinese and 19 foreign teachers. A department of Pharmacy was opened in autumn 1932 offering a course of four years (1281).

A medical school (co-ed.) was opened at *Harbin* in 1926 and supported by special appropriations from the Chinese Eastern Railway and local Municipality. Clinical work is done at the Ping-chiang and City Hospitals, the teachers being mainly graduates of the South Manchuria Medical College. Seventeen students of the first class graduated in 1930, followed by 22 in 1931 (1282).

It is curious to note that parallel with the endeavours of both Chinese and foreigners to make the blessings of modern medicine available for China, occasional attempts were made to introduce ideas which tended to strengthen the superstitious beliefs of the people. An example is contained in the following statement made by Latour-ette (1283):

An interesting illustration of the attitude of some of the missionary body toward medicine was the wide attention paid to the "healing mission" of James Moore Hickson, an earnest devout English layman, who toured China in 1921 and who used no other therapeutics than prayer and the laying on of hands.

The question of training *hospital technicians* had been discussed at the 1920 Conference of the China Medical Missionary Association,

(1281) Ibidem, p. 757, 1926, p. 763, 1927, p. 668, 1930 p. 419 (Obituary for Dr. C. W. Service); 1930 Directory of the Nat. Med. Assoc., Med. Institutions, p. 11; Faber's Report; Shields l.c., p. 365; Chin. Med. Jl., 1935, pp. 1026, 1039.

(1282) China Year Book 1929-30 and personal information.

(1283) L.c., p. 790.

and in 1923 a resolution was passed, approving of the establishment of an institute for the purpose. This *Institute of Hospital Technology* was opened in 1925, in connection with St. James' Hospital at *Anking*, under Dr. Geo. Hadden who had trained helpers of this kind for years for his own establishment. It was proposed to receive pupils in ordinary and in more advanced laboratory routine, in record-keeping, in history-taking, in common dispensing and in anaesthetics. Arrangements could also be made for artisan technicians. Soon pharmacy classes also were started to train working dispensers to take over the N.A.C. *Materia Medica* classes in their own hospitals. This course, intended for four months, was under Dr. H. B. Taylor who, with the support of the Church Missionary Society, had played a considerable role in the foundation of the Institute.

The China Medical Journal in 1926 started with a special section dealing with subjects that seemed of particular interest to the workers of the institute which soon proved a most valuable help to smaller hospitals.

The St. James' Hospital and the Institute had to be closed in 1927 and it was not before 1929 that a fresh beginning was made in connection with the new Union Hospital at *Hankow*. From a description by Dr. Hadden of this new phase, it can be gathered that two main courses, each of six months, were given in Pharmacy and Laboratory work. Tuition in the administration of anaesthetics, record-keeping and history-taking could be provided in addition. In the spring of 1930, it was proposed to admit a few women. Classes were necessarily small.

From the latest reports available it can be gathered that Dr. Hadden, owing to serious illness, had to return to England but that the work is being carried on. At present (1935) six months' and twelve months' courses are being given in laboratory technique, a six months' course in pharmacy and one in anaesthesia requiring up to six months. There is also a Mechanical Department which makes and supplies artificial limbs and other hospital appliances. Up to March, 1935 there was a total of 154 registrations (including 23 at Anking) (1284).

Turning to efforts at education of nurses, the opening in 1921 of a *Union Training School for Women Nurses* (in connection with the Margaret Williamson Hospital at *Shanghai*) as a continuation of the Mary Black School of Soochow must be mentioned. The course of study was three years, the theoretical instruction (in the Chinese

(1284) *China Med. Jl.*, 1925, pp. 745, 817 (Hadden), 1127-29, 1927, pp. 669, 736, 1929, pp. 135, 170, 720, 1930, p. 154 (Hadden), 1931, p. 671; *Chin. Med. Jl.*, 1935, p. 1040.

language) being in accordance with the curriculum of the Nurses' Association of China. The School, which continues to exist, also gives short courses to women nurses already registered under the N.A.C. (1285).

The Nurses' Training School connected with the *Shanghai Red Cross Hospital* was reopened in July, 1922. It had according to a report published in 1930, a staff of 16 graduate nurses as instructors and supervisors and an enrolment of 60 pupils (1286).

The Nurses' Training School connected with the Alden Speare Memorial Hospital at *Yenping*, Fukien, was recognized by the Nurses' Association of China in May, 1923. It admitted male nurses only (1287).

A report of the Stout Memorial Hospital at *Wuchow*, published in 1924 (1288), refers to a training class of 18 nurses (both men and women) in charge of a registered Chinese nurse.

The work on *Medical Terminology* was assiduously continued, the China Medical Board making in 1923 a new appropriation of Mex. \$18,000 to help for a period of three years.

The 7th Annual Conference on Medical Terminology took place at Nanking in July, 1921, 13 organisations being represented. The subjects treated were Pathology, Physics (Magnetism and Electricity), Chemistry and Biology (a beginning being made with Zoology).

Dr. C. Voonping Yui read, at the 1922 Conference of the National Medical Association, a paper on "The Importance of Adopting a Uniform Medical Nomenclature" where he pointed out that the *Scientific Terminology Association* (which name had been adopted since widening the scope of the work) had, during the seven years of its activity, treated over 10,000 terms.

In July of 1922, the 8th Conference of the Scientific Terminology Association was held, when about 2,000 terms exhausting the subjects of pathology, physics, botany and zoology, were decided upon. It was proposed to translate physiological chemistry and parasitology in 1923, and internal medicine, surgery, protozoology, physiology and pharmacology in 1924. The deliberations on some of these subjects (surgery, medicine, physiology and pharmacology), were continued during the 1925 and 1926 conferences (1289).

The Committee on Publication and Translation of the China

(1285) *Ibidem*, 1921, p. 88; 1929 Report of the Margaret Williamson Hospit., p. 47; 1930 Directory of the Nat. Med. Assoc., Shanghai, p. 41.

(1286) *Ibidem*, p. 62; 1922-23 Rep. of the Chinese Red Cross Hospital, Shanghai p. 7.

(1287) *China Med. Jl.*, 1924, p. 397.

(1288) *Ibidem*, p. 426.

(1289) *Nat. Med. Jl.*, 1921, p. 95, 1922, pp. 43, 52, 205; *China Med. Jl.*, 1926, p. 891; Report of the China Med. Board, 1923, p. 33.

Medical Association under Dr. Cousland reported, for 1920-23, the publication of the following *medical works in Chinese*:—

New Books:—

Gray's Anatomy, Vol. I;
Cunningham's Practical Anatomy;
Folin's Biological Chemistry;
MacPherson & Henderson's General Chemistry;
English-Chinese Vocabulary of Chemical Terms;
Reese's Vertebrate Embryology;
Meuser's Fundamentals of Pharmacy;
Evans' Laboratory Experiments in Physiology;
New Official Terminology in Anatomy, Histology & Embryology;
Venereal Diseases, ed. by U.S. Army Dept.;
Hospital forms.

New Editions:—

Evans' Obstetrics (4th);
Skin Diseases (6th);
The Roller Bandage (3rd);
Holt's Diseases of Children (2nd);
First Aid & Stretcher Drill (2nd);
Penrose's Gynecology (3rd);
Leslie's Hygiene & Public Health (2nd);
Read's Materia Medica Tables (5th);
Robb's Nursing (6th);
Hare's Therapeutics (5th);
Rose & Carless' Surgery (2nd).

During the period 1923-24, there appeared, according to Dr. Cousland's report:—

New Books:—

Gray's Anatomy, completed work;
May's Diseases of the Eye;
Porter's Diseases of the Throat, Nose & Ear;
Hospital forms (further series);
Heimbürger on Syphilis.

New Editions:—

The Roller Bandage (4th);
Holt's Diseases of Children (reprint 2nd ed.);
First Aid & Stretcher Drill (3rd);
Penrose's Gynecology (reprint 3rd ed.);
Read's Materia Medica Tables (reprint 5th ed.);
Hutchinson & Rainy's Clinical Methods (Phys. Diagnosis) (2nd);
Medical Lexicon (4th & 5th);
Osler's Medicine, Vol. I (3rd);
Rose & Carless' Surgery, Vol. I (3rd);
Evans' Obstetrics (5th);
Evans' Laboratory Experiments in Physiology (2nd);
Neal's Diseases of the Skin (7th);
Halliburton's Physiology (reprint 7th ed.);
Hare's Therapeutics (reprint 3rd ed.);
Bruce's Materia Medica (reprint).

The two reports, published by the Council in 1926, show that Dr. Cousland left in spring 1925 for Canada, hoping to return in the autumn, but was delayed through ill-health. In his absence Dr. McAll (Tsinanfu) was appointed acting editorial secretary. Publications were as follows:—

Osler's Medicine (completed);
 Stitt's Practical Bacteriology, Blood Work & Parasitology;
 Rose & Carless' Surgery (completed);
 Medical Lexicon (new ed. with appendix);
 Pharmacology;
 Read's Materia Medica Tables;
 Cochran's Wassermann Test (in Chinese & English);
 Graves' Gynecology;
 Venereal Diseases (new ed.);
 Rawling's Landmarks;
 Heimbürger's Syphilis (2nd ed.);
 Useful Drugs;
 Rosenau's Preventive Medicine.

Reprints:—

Hare's Therapeutics;
 Meuser's Pharmacy;
 Penrose's Gynecology;
 Diseases of the Skin;
 Clinical Methods;
 Physiology.

Dr. Laurence M. Ingle, on behalf of Dr. McAll (absent on furlough), gave the following report for 1928:—

The work of the Council was continued without hindrance, but only two of the ten members were in China throughout the year. Dr. Gillison's return to China was uncertain; Dr. Cousland was living in Canada, but continued the supervision of the work. The following books were published:
 Materia Medica, Bruce & Dilling, New translation;
 Appendix to Osler's Medicine;
 Diseases of Skin, Heimbürger;
 Diseases of Throat, Nose & Ear, Porter, 2nd ed.;
 Diseases of the Eye, May, 2nd ed.;
 Histology, Lewis & Stöhr, 2nd ed.;
 Pathology, Stengel, 2nd ed.;
 Diseases of Infancy & Childhood, Holt, 4th ed.

It is sad to relate that Dr. Cousland, to whose incessant work much of the success of the Council on Publication is due, died in 1930. He has found a worthy successor in Dr. P. L. McAll, who has made Tsinanfu the centre of the publication work of the China Medical Association (1290).

Mention must also be made of two publications in English:

Dr. Harold Balme's "China and Modern Medicine", published by the London Missionary Society in 1921, is mainly devoted to a consideration of medical missionary work, yet gives a good survey of the history of Western Medicine in China, especially in its early stages.

Noteworthy also is a series of little pamphlets, called the China Inland Mission Health Manual (1923), intended to bring a knowledge of diseases and their prevention to missionaries, especially those for whom no immediate medical aid is available (1291).

(1290) China Med. Jl., 1923, p. 278, 1925, p. 162, 1926, pp. 292, 892, 1929, p. 172, 1930, p. 384 (Cousland's Obituaries); Faber's Report.

(1291) China Med. Jl., 1923, pp. 703, 973.

As will be seen from the list inserted below, numerous Chinese medical (partly popular) *journals* began to appear:—

A. Journals which according to the latest information available, continue to appear:

<i>Name:</i>	<i>Editor:</i>	<i>Date 1st publ.:</i>	<i>Remarks:</i>
Medical Jl. of the Shantung Christian University 齊魯醫刊	Dr. Chiang Ch'ing 江清	1921	Bimonthly.
Chinese Pharmacological Jl. 民國醫藥雜誌	Dr. S. M. Hou 侯希民	1923	Published monthly at Peiping; started by students returned from Japan.
Health Quarterly 衛生季報	Council on Health Education 衛生教育會	1924	Published at Shanghai, formerly in Chinese and English, now monthly in Chinese only.
Pharmaceutical Magazine 醫藥學	Dr. L. M. Huang 黃龍鳴	1924	Published monthly at Shanghai; taken over by Tung Teh School.
Health Magazine 衛生雜誌	Central Epidemic Prev. Bureau, Peiping 中央防疫處	1925	Quarterly.
Health Jl. 衛生月刊	Health Assoc. of the Practitioners of Kirin Province 吉林省會醫學會	1925	Published monthly at Kirin.
Medical Original Notes 醫學原著索引	Manchurian Medical College 滿洲醫大	1925	Published monthly at Mukden.
Newest Treatment 日新治療	Japanese Dr. 兒玉秀衛	1925	Published monthly at Osaka, Japan.
Popular Medicine 協和通俗月刊	Peiping Union Med. College 北平協和醫學校	1926	Monthly.
Pharmaceutical Jl. 藥學報	Dr. Chao Wu Ch'iao 趙午橋	1926	Published monthly at the Chekiang Med. College, Hangchow.
Medical Weekly 醫學週刊	Ping-Yin Med. Assoc., Peiping 丙寅醫學社	1926	Weekly.
Leper Quarterly 癩瘋季刊	Chinese Mission to Lepers 中華癩瘋救濟會	1927	Published in Chinese and English at Shanghai.

<i>Name:</i>	<i>Editor:</i>	<i>Date 1st publ.:</i>	<i>Remarks:</i>
Tien Teh Therapeutical JI. 天德醫療新報	New Tien Teh Therap. Association, Shanghai 1927 天德醫療新報社		Monthly.
Health Magazine 衛生公報	Health Dept., Peiping 1928 北平衛生局		Monthly.
Medical Society JI. 社會醫報	Drs. Yu Yun Hsiu & Hu Ting-an 1928 余雲岫 胡定安		Published weekly at Shanghai.
Japan. Med. JI. 同仁會醫學雜誌	Dr. Kono 1928 小野得一郎		Published monthly at Tokyo, Japan.
Health Reports 衛生公報	Ministry of Health 1929 衛生部		Monthly.
Wei Sheng Weekly 衛生週刊	Medical College of the National University, Peiping 1929 北平大學醫學院		Weekly.
Medical Critic 醫藥評論	Dr. Chu Ming-yi 1929 褚民誼		Published bi-weekly at the South-Eastern Med. School, Shanghai. 東南醫大
Tung Nan Medical JI. 東南醫刊	Tung Nan Medical College 1929 東南醫大		Monthly.
Pharmaceut. Weekly 醫藥週刊	Hangchow Pharmaceutical Soc. 1929 杭州醫藥師協會		Attached to Commercial Newspaper. 石牌樓花園
Jl. of Treatment and Diagnosis 治療醫報	Dr. C. C. Wang 1929 汪金張		Published monthly at Shanghai.
New Medical Science 新醫學月刊	Tientsin Medical Assoc. 1929 天津醫學會		Monthly.
Preliminary Health Talk 醫學衛生淺說	Tientsin Medical Assoc. 1929		Monthly.
New Medical Views 新醫學觀	Dr. Chang Teh-chow 1929 張德周		Published monthly at Osaka, Japan.
North China Med. JI. 華北醫報	Dr. Chow Huan-hsi 1929 周慎四		Published monthly at Peiping.

B. Journals which have ceased to appear:

Name:	Editor:	Date 1st publ.:	Remarks:
Medical Talk 醫藥話	Chekiang Med. College Assoc.	1921	Quarterly.
Athletic Quarterly 體育季刊	Athletic Quarterly Assoc.	1922	Changed its name to Athletic and Hygiene Journal.
New and Modern Treatment 新醫人	New and Modern Treatment Association	1922	Fortnightly.
Chino-French Medical Jl. 中法醫誌	Drs. Lu and Y. F. Chu 朱毓芬	1922	Monthly (at first quarterly).
Hygiene Jl. 衛生	Chekiang Health Assoc.	1922	Monthly. Two numbers only.
Chino-French Medical Jl. 中法醫學雜誌	Dr. S. Y. Pei 貝開榮等	1923	Monthly.
Medical and Druggist Jl. 醫藥	Druggist Association	1923	Monthly, organised by students returned from Chi-Pa Med. Coll., Japan.
National Med. Monthly 中國醫藥月刊	Dr. Ku Chen 顧忍	1923	Monthly.
Chemical Jl. 化學醫藥雜誌	Chemical Jl. Assoc.	1923	Monthly.
New Tung-Teh Jl. 新同德	New Tung-Teh Assoc.	1924	Monthly.
Practical Hygiene 實用衛生	Plague Prevention Service, Harbin	1924	Bimonthly (8 numbers appearing).
Hygienic Yearly	Dr. Seto Chio, Canton Health Bureau 司徒朝	1926	Yearly.
Life and Health 生命與健康	Dr. S. F. Lu 盧師臨	1926	Weekly.
New Medical Society Jl. 新療與社會	Practitioners' Assoc. of Shanghai	1926	Weekly, attached to Se-Se-Pao News.
Popular Health 通俗衛生	National Epidemic Prevention Bureau, Peiping	1927	Monthly.
Public Health 公共衛生月刊	Dr. Wong Chi-min 王吉民	1928	Monthly.
Health Guidance 衛生藥報	Yeu-Ai Hospital 友愛診所	1928	Fortnightly.
Chino-German Med. Jl. 德華醫學雜誌	Dr. W. K. Ting	1928	Monthly.
Health Adviser 衛生顧問	Health Adviser Assoc.	1928	Monthly.*

*Information collected by Drs. T. C. Chin, Ministry of Health, and C. S. Lin.—
A further number of less important journals was not embodied in the above lists because the date of their first publication could not be ascertained.

Besides a few non-Chinese periodicals mentioned earlier in this chapter, the *Caduceus*, which appeared (first with three and then with four yearly issues) in 1922 as the organ of the *Hongkong University Medical Society*, deserves mention. The first Editorial Board of this valuable journal, which continues to appear, consisted of Prof. H. G. Earle (then President of the Society), Wu Chang-yao (Editor) and Chau Sek-nin (Business Manager) (1292).

Returning to a survey of *hospital activities*, we again start with *Canton*.

Medical work was resumed at the Canton Christian College, which had bought a large tract of land at Lingnan. In order to win the goodwill of the people who were unfavourably disposed towards this transaction, dispensaries were started in a small house owned by the College in New Phoenix Village and in three school houses in other villages where day schools were carried on by the Students' Christian Association (1923).

In order to have a building for the dispensary on the campus, Drs. Cadbury and Wei Kok appealed to General Lee Fuk-lam who undertook to secure a sum of \$10,000. The subscription list was headed by Dr. Sun Yat-sen with a gift of \$1,000, altogether \$13,000 being forthcoming. Thus it was possible to add two small wards for men and women to the dispensary, as well as three private rooms and a residence for a Chinese physician. The completed plant was formally opened in the presence of General Lee on April 21, 1925, (dispensary work having already been started almost one year earlier). The work was under Drs. Cadbury, Nottage, Chung and Jen, assisted by four Chinese nurses. This staff, besides the hospital and dispensary, took care of the College community of over 2,000 persons.

Noteworthy were the activities of Dr. Chung, a woman physician, who was able to build up, within a short time, an obstetrical practice among the villagers (1293).

In 1926 the Canton Medical Missionary Society, confronted by an ultimatum from the Miscellaneous Workers' Union, decided to close its hospital. Patients and staff were evacuated on March 11 of that year. Though immediate endeavours were made by Mr. Eugene Chen, Commissioner of Foreign Affairs under the new government, to reopen the hospital, it remained closed until September 5, 1929, when work was resumed, at first on a limited scale.

During the closing of the institution the opportunity had been taken to reorganize the administration with a view to meeting changed

(1292) *Caduceus*, Vol. I; *Nat. Med. J.*, 1922, p. 125; *China Med. J.*, 1923, p. 333.

(1293) Dr. Cadbury's Report on the Opening of the Lingnan Hospital (Canton, 1925); *China Med. J.*, 1926, p. 402.

conditions in China; to provide for the necessary new plant and to carry out more actively one of the main objects of the Society, namely, medical education. In pursuance of these plans, the hospital was transferred to the Directors of Lingnan University on July 23, 1930, on condition that they would carry on the objects of the Society as expressed in its constitution—the healing of the sick, medical education and the preaching of Christianity—and use all funds derived from the Society and its properties for these purposes.

In 1930 the reorganised staff of the hospital comprised Drs. W. W. Cadbury (Head of Dept. of Medicine and Superintendent), J. O. Thomson (Dept. of Surgery), F. Oldt (Director of Health Service), A. C. Siddall (Gynaecology and Obstetrics), Hsü Kang-liang (許剛良—Dept. of Paediatrics), R. L. Lancaster (Oto-Laryngologist).

Visiting and resident physicians, internes, nurses, pharmacists and technicians were all Chinese. It is thus gratifying to note that Dr. Parker's old hospital was once more able to pass successfully through a serious crisis and that, at the same time, a great step forward had been taken to realize the wish of its venerable founder for an institution supported and managed by the Chinese.

While the Leung-Kwong Hospital of the Southern Baptist Convention (1294), the David Gregg Hospital, the Lingnan Hospital and Dr. Todd's private institution carried on their work during 1927 without any serious difficulties, the J. G. Kerr Hospital for the Insane was confronted by demands from the workmen which the Board of Directors found impossible to fulfil, so it was decided to close down. However, part of the work was carried on by the Government (1295).

From statistics covering the work of the John Kerr Hospital for Insane from 1898 to 1927 it can be gathered that there were

Admitted: Men, 4,428; Women, 2,171; Total 6,599 cases;
 Discharged: Men, 4,100; Women, 1,813; Total 5,913 cases.
 Average per cent of cured compared with those admitted: 24.0;
 Average per cent of cured compared with those discharged: 26.7.

To show the incidence of the various types of mental diseases three years were chosen:

	1918		1922		1925	
	Men:	Women:	Men:	Women:	Men:	Women:
Manic-depressive insanity:	78	47	103	95	94	101
Dementia praecox:	60	8	109	29	114	27
General paralysis of the insane:	32	8	46	7	51	6
Alcoholic psychoses:	9	0	23	2	13	0
Epilepsy alone or with insanity:	3	2	14	2	9	5
Idiocy or imbecility:	2	0	4	7	3	5

(1294) This hospital was opened in 1926 to continue dispensary work started in 1916 by Dr. Cheung San Kee, a pupil of Kerr (Cadbury and Jones, l.c., p. 227).

(1295) Nat. Med. Jl., 1921, p. 31; China Med. Jl., 1926, p. 481, 1927, pp. 164, 178, 473-474, 1929, p. 938; Report of the Canton Hospital for the Years 1924-1930.

The American Board Hospital at *Ningpo* successfully carried on its activities in 1927 under its Chinese staff, with supervision by the foreign doctors. The Church Missionary Society had to close down, but was reopened in 1928 under Drs. Goodwin and Dzeng.

Two private hospitals founded during this decade were the Tien-sheng (天生醫院) and the China Hospital (中國醫院) opened in 1922 and 1923 respectively (1296).

Creditable *Red Cross* work was performed in *Shanghai* during the warfare between Kiangsu and Chekiang Provinces in 1924 under the leadership of Field Director Dr. New Way Sung. The Red Cross Society used its Tientsin Road Hospital under Dr. New Way Ling as the main distributing centre. The serious cases among the wounded were partly admitted there or in St. Luke's Hospital which put 50 beds, the services of Dr. J. C. McCracken and its able Chinese doctors at the disposal of the Society. Less severely wounded were sent to the Chinese Isolation Hospital on Tibet Road and to several other institutions volunteering help. Drs. James L. Maxwell, W. W. Peter, W. G. Hiltner and A. H. Swan, as well as the students (12 in number) of the three upper classes of St. John's Medical School, also took a laudable part in this charitable work (1297).

An out-patient clinic, first known as the Swarthmore Dispensary and later on as the *Hongkew General Dispensary*, was started in November, 1925, by Dr. Elizabeth Shapleigh in a small Chinese house on Tien-teh Road, moving to its present quarters at Lin-ping Road in November, 1928. Following the death of Dr. Shapleigh, it was taken over by the *Chinese Mission to Lepers* on April 1, 1930. Under the new regime, in addition to a daily clinic for ordinary patients, special consultations are held twice weekly for lepers, of whom about 50 attended in 1930 (1298).

In 1926 the *Country Hospital*—an imposing edifice with black marble corridors—was presented to the Shanghai Municipal Council and was opened in July of the same year. It was controlled by an International Board of Governors, the chairman of which was to be a member of the Council. The new institution was intended as a hospital for foreigners, the staff and visiting doctors to be of all nationalities; Chinese patients could be admitted, however, provided they conformed to European standards.

The Victoria Nursing Home which had served for a purpose similar to that of the Country Hospital, was closed on May 15, 1928.

(1296) *China Med. Jl.*, 1927, p. 476, 1929, p. 1292; 1930 Directory of the Nat. Med. Assoc., Med. Inst., pp. 19, 26.

(1297) *Nat. Med. Jl.*, 1924, p. 406; *China Med. Jl.*, 1924, pp. 791, 867.

(1298) F. Y. Pan, *ibid.*, 1930, p. 793.

Its Maternity ward continued work for two more years while the affiliated Mental Hospital is still open(1299).

Early in 1926, a temporary *Red Cross Hospital* was opened at *Peking* through the initiative of Dr. W. W. Yen, President, and Admiral Tsai Ting-kan, Vice-president of the Red Cross Society, to care for the large number of wounded soldiers brought into the city at the time.

When the last patient was discharged in autumn of 1926, the efforts to create a permanent hospital were redoubled. A representative committee was appointed, and Dr. S. H. Chuan offered his voluntary services as chairman as well as Superintendent of the hospital. A palace building, situated on the North Lake and comprising 100 verandah-planned rooms in several picturesque courtyards, was presented to the Society by the Government. Immediately after taking over this property in July, 1927, a free dispensary was opened, soon followed by accommodation for 100 in-patients.

The hospital which continues to exist now has two main branches of work, namely: (a) An out-patient department; (b) a *Sanitarium* for patients with active tuberculosis. Convalescent patients have the opportunity of using an affiliated sanitarium in the Western Hills (1300).

In 1925, two years after a temporary out-patient clinic had been started, the Goldsby King Memorial Hospital under Dr. Newman was opened at *Chinkiang*. The unfinished building had already been used to shelter wounded during the civil warfare(1301).

Dr. Main carried on his activities at *Hangchow* until 1926 when he left, after 46 years of work, for Scotland. The further history of his undertakings will be dealt with in a subsequent paragraph.

Two private Chinese hospitals founded at Hangchow in 1927 and 1928 respectively, were the West Lake Hospital (西湖醫院) and the Kungchi Hospital (杭州公濟醫院)(1302).

A new building of the *Soochow* Missionary Hospital was officially opened on November 6, 1922. This up-to-date plant had accommodation for 70 patients in the hospital department and about 60 in the

(1299) 1930 Directory of the Nat. Med. Assoc., Shanghai, pp. 47, 71.—Here (Med. Institutions, pp. 70, 76, 77) mention is also made of the following private hospitals:

The (萬國體育會醫院), founded 1922 by the International Recreation Club; the Yi Lu Hospital (義露醫院), founded in 1926 and the Wei Lu Hospital (惠旅養病院), founded 1927.

(1300) Chuan, Nat. Med. Jl., 1927, p. 389; 1930 Directory of the Nat. Med. Assoc., Peiping, p. 23.

(1301) Nat. Med. Jl., 1925, p. 205.

(1302) Kingston De Gruche, l.c., Chapter VIII; 1930 Directory of the Nat. Med. Assoc., Med. Inst., pp. 39, 48.

out-patient hostel. Of the total cost (\$250,000), one quarter had come from hospital resources and Chinese donations, \$50,000 from the China Medical Board, and the balance from the Board of Missions of the Methodist Episcopal Church South.

When the new hospital was opened, an attempt was made to put female nurses in the wards for men, which proved a complete success even when, in 1924, many wounded soldiers were admitted.

Two private Chinese hospitals opened in 1921 and 1923 respectively, were the Pao Chang (葆初醫院) and the Pei Lun (卜麟醫院). Of interest is the recently-opened psychopathic ward connected with the Elizabeth Blake Hospital and under Drs. L. S. Wang and M. P. Young (1303).

The internecine war between General Chang Tso-lin and General Wu Pei-fu in 1922 made clear the necessity of a proper medical service for the Manchurian troops. Hence, in addition to the employment of younger and energetic Chinese doctors, General Chang and his son decided to construct a model military hospital at Mukden, partly to treat the soldiers, and partly to train medical officers. The task of planning and organizing this establishment was entrusted to Dr. Wu Lien-teh, who had built and planned the Peking Central Hospital in 1916-18. A Chinese architect, S. S. Kwan, who had been trained in America, was employed.

The verandah system was chosen, with a central two-storeyed block for administration and officers' ward and individual unit wards radiating from a covered central pathway. Thus far, 26 out of the 35 blocks planned have been built, each forming a service unit of its own. The accommodation was thus brought up to 400 beds, the total cost of the plant being over \$800,000. A side-track of the Peking-Mukden Railway brings this hospital within easy reach of all parts (1304).

At *Tsinanfu*, a new Home for forty Chinese women nurses in connection with the University Hospital, was formally opened on January 17, 1923.

In 1924, a twenty-bed German Hospital (濟南) was established.

A scheme for the systematic scientific treatment of lepers which had been under consideration since 1920, finally matured in 1925 as a result of co-operation between the Shantung Christian University, the Mission to Lepers and the local Chinese gentry. The building erected for the work could accommodate about 50 male patients, all but far-advanced cases being admitted. North of the hospital was

(1303) Customs Decenn. Rep., 4th Issue, Vol. II, p. 69; Nat. Med. Jl., 1922, p. 267; Snell, *China Med. Jl.*, 1923, p. 341, 1925, p. 832; *ibidem*, 1929, p. 1293, 1930, p. 946; 1930 Directory of the Nat. Med. Assoc., Med. Inst., pp. 16, 86.

(1304) Nat. Med. Jl., 1924, p. 273.

a piece of land for the patients to cultivate. Drs. L. F. Heimburger and W. Y. Yü (Resident Medical Officer) reported in 1930 upon the treatment of 110 patients (including three females), 37 of whom could be paroled (1305).

A Quarantine Hospital was built at *Antung* in 1923 at a cost of \$38,000, and opened in 1924. The running expenses of Tls. 8,400 were derived from the Customs Surplus and the hospital was put under the control of a local Quarantine Committee (安東海口防疫局), consisting of the Mayor, the Customs Superintendent and the Customs Commissioner. The Port Health Officer acted as the resident medical officer in charge of the station and hospital (1306).

St. Columban's Medical Mission, a Catholic foundation, began dispensary work at *Hanyang* on March 15, 1921 under Dr. Robert F. Francis. The daily attendance soon mounted up to 200 cases (1307).

Turning to *new establishments* founded during the period 1921-1927, we note an interesting undertaking begun in 1921 at *Shekki* (石岐), Heung Shan District of Kwangtung Province. About two years earlier, an agreement had been concluded between the Canadian Presbyterian Mission and a number of wealthy Chinese, whereby the latter were to build and finance a hospital, while the mission was to furnish a foreign physician and a foreign nurse. With this arrangement in view, dispensary work was commenced in the autumn of 1921 and soon became very popular. In spring, 1923, a modern hospital building for 50 patients was started and formally opened two years later. Plans for training nurses were also made. The Board of Directors of the hospital was entirely made up of Chinese Christians and had the right to control the finances, excepting current expenses (1308).

The Emma M. Dubs Memorial Hospital at *Yuhsien* (攸縣), Hunan, was also erected with the help of the Chinese gentry who were favourably impressed with the medical help rendered to the people by non-medical missionaries first occupying the station. Regular medical work was begun in 1921, when the hospital was opened under Drs. R. W. E. Spreng, P. Y. Wang and G. Y. Lang (1309).

A hospital of the American Church Mission was formally opened at *Changshu* (常熟), Kiangsu, on September 15, 1922, under

(1305) *China Med. Jl.* 1923, p. 538, 1928, p. 66; Anderson *ibidem*, 1930, p. 745, Heimburger & Yü, *ibidem*, p. 752; 1930 Directory of the Nat. Med. Assoc., Med. Inst., p. 100.

(1306) *Ibidem*, p. 30; 1929-30 Report of the Quarantine Hospital by Dr. Tang Tsungnin (published in the Manchurian Plague Prev. Service Rep., Vol. VII, p. 207).

(1307) *China Med. Jl.*, 1923, p. 538.

(1308) *Ibidem*, 1925, p. 435.

(1309) *Ibidem*, 1924, p. 501.

Dr. Walter H. Pott, assisted by a Chinese interne, pharmacist and nurses(1310).

A Canadian Presbyterian Hospital was opened at *Weihwei* (衛輝), in Honan in 1923. Connected with this establishment (76 beds) were an out-patient department (in a separate building) and hostels to take care of surplus patients during the busier seasons of the year(1311).

A new Mission hospital at *Pingtingchow* (平定州) in Shansi was opened in November 1923, by the Church of Brethren under Dr. Fred J. Wampler. Wards for men and women were provided with a total capacity for 70 in-patients. The equipment, comprising an X-ray plant, was thoroughly modern(1312).

The Mosse Memorial Hospital at *Tatungfu* (大同府) in Shansi began to admit in-patients in December, 1923. The site or the hospital (fifty mow of military ground) had been given by the military Governor on an eighty years' lease at a nominal rent, which he donated to the hospital(1313).

Medical work in *Jukao* (如皋), Kiangsu was started in May, 1924, when a temporary hospital with accommodation for about 30 patients was started under Dr. L. S. Huizenga of the Christian Reformed Church Mission(1314).

Another foundation of the year 1924 was the Church Missionary Hospital at *Mienchuhsien* (綿竹縣), Szechwan Province, under Dr. J. H. Lechler, which was the only modern hospital in a district of about 10,000 square miles with a population of some 8 millions(1315).

Systematic treatment of lepers at *Yunnanfu* had been started in 1926 by Dr. Alexander J. Watson, who unfortunately had no hospital of his own but used the missionary hospital to hold two weekly clinics. He also visited the Chinese Government Leper Institution to inject the inmates with chaulmoogra oil. Dr. Watson published in the 1930 Leprosy Number of the China Medical Journal a valuable article on his experiences in Yunnanfu and Pakhoi, 1924-26(1316).

Dr. R. P. Hadden (who had originally come to Canton in 1911 and had returned home in 1914 to join the R.A.M.C.) went in 1925 to Chuchiachai in Shantung, but was transferred in 1930 to *Chao T'sun* (趙村) where he unfortunately succumbed to typhoid(1317).

(1310) Ibidem, 1922, p. 550.

(1311) Ibidem, 1923, p. 1034.

(1312) Ibidem, p. 1058.

(1313) Ibidem, 1925, p. 1160, 1926, p. 56.

(1314) Ibidem, 1924, p. 531, 1925, p. 1159.

(1315) Ibidem, p. 82.

(1316) Ibidem, 1930, p. 781, Watson, p. 803.

(1317) China Med. Jl., 1930, p. 315.

In our account of hospital activities, we have dwelt as little as possible upon the events of the year 1927 because the great indirect influence exerted by them, deserves special study.

We propose to follow the two surveys given by Dr. Maxwell (1318) which abundantly sum up the 1927 situation in the various provinces:—

Kwangtung.

Number of Hospitals (excluding Canton and Swatow)	18
Running normally under foreign superintendence	2
Under temporary arrangement with Chinese staff (including Kongchuen & Hopo, discussed below)	10
Closed	6.

It will be seen that more than half of the missionary hospitals were able to carry on with the aid of their Chinese staffs. The hospital at *Kongchuen* was officially taken over by the Chinese "Church of Christ"; that at *Hopo* (河婆) was also fully organised under Chinese management and carried on as before.

The situation at Canton has already been discussed. The *Swatow* hospitals successfully carried on their work.

Kwangsi.

Number of Hospitals	4
Running normally under foreign superintendence	1
Under temporary arrangement with Chinese staff	3
Closed	—

The situation was thus a favourable one. The Stout Memorial Hospital at *Wuchow*, which had been closed down in 1926(1319), was again under its foreign superintendent.

Kweichow.

Number of hospitals	2
Carried on by Chinese staff (Tungjen—同仁—Hospital)	1
Closed (Kweiyangfu Hospital)	1.

Fukien.

Number of Hospitals	30
Running under normal foreign or Chinese superintendence	7
Under temporary arrangement with Chinese staff	18
Closed	5.

Hunan.

In this province also the situation was a favourable one. The position of the *Yenping* hospital was a curious one. It was taken over by the military, but was kept open, Dr. Skinner being confirmed as Hunan medical superintendent.

The hospitals here were mostly closed but were gradually reopened again. At the *Changteh* Hospital a new Board of Directors was appointed in 1929, consisting of

- Three members selected by the Church Session;
- Three members selected by the Hospital Staff;
- One member selected by the Presbyterian Mission.

(1318) Ibidem, 1927, pp. 472, 806.

(1319) Ibidem, 1926, p. 483.

The results of this devolution were quite gratifying and the work was successfully carried on under Drs. G. T. Tootell and W. L. Bao (1320).

Kiangsi.

Number of Hospitals	7
Running under foreign staff	0
Under well-organised Chinese management	2
Under temporary arrangement with Chinese staff	2
Closed	3.

The work at the *Kiukiang* Women's Hospital and at the *Nanchang* Women's Hospital, being for a considerable time under Chinese women physicians (that at Nanchang under Dr. Ida Kahn) suffered no interruption.

Chekiang.

Number of Hospitals	9
Running under supervision of foreign staff	3
Under temporary arrangement with Chinese staff	4
Closed	1
Taken over by local authorities	1.

The hospital at *Kashing* was rented to a group of Chinese doctors under Dr. C. E. Chen who—to judge from a report published in 1928 (1321)—successfully carried on.

The *Hangchow* Church Missionary Hospital was taken over by the local authorities but was returned in 1928. The 1928-29 report of the *Kwang-Chi* Hospital (as the establishment is now called) (1322), showed that the work had been fully re-established.

Kiangsu.

Number of Hospitals (except Shanghai)	20
Running normally with foreign staff (1323)	2
Under temporary arrangement with Chinese staff	7
Closed	10
Seized by military	1.

Anhui.

Number of Hospitals	9
Running under foreign superintendent	1
Under temporary arrangement with Chinese staff	3
Closed	4
Seized by military	1.

Hupei.

Number of Hospitals (except Wuhan)	7
Running under temporary arrangement with Chinese staff	5
Closed	2.

On the whole, in spite of much trouble, most of the hospitals were able to carry on, though often under great difficulties. It is interesting to note that the Buchanan Memorial Hospital for Women at *Ichang* was loaned to the Chinese doctor to run as best as she

(1320) Ibidem, 1930, p. 584.

(1321) Ibidem, 1928, p. 862.

(1322) Ibidem, 1930, p. 706.

(1323) For Hinghwa see ibidem, 1927, p. 664.

could, at her own charges. It was taken over by the mission in 1929 under Dr. Robina Scott(1324).

The hospital at *Teian* (Te-an-fu) and its branch at *Suichow* (隨州) were temporarily under a purely Chinese staff, who carried on in a capable manner. In 1929 a Board consisting mainly of Chinese members was formed(1325).

The eight hospitals at *Wuhan* were all open, mostly under temporary arrangement with a Chinese staff. The Hodge Hospital was in charge of a well-known Chinese member of the permanent staff.

Szechwan.

Number of Hospitals	19
Running under foreign staff or supervision	2
Under temporary arrangement with Chinese staff	12
Closed (a dispensary remaining at Suifu)	5.

Conditions in the province were favourable, a limited number of hospitals having to close down because there were no Chinese doctors to take the place of the foreign ones evacuating by consular orders.

Manchuria.

Number of hospitals	18
Running normally under foreign or Chinese supervision	18.

Chihli.

Number of Hospitals	20
Running normally under foreign or Chinese supervision	14
Under temporary arrangement with Chinese staff	4
Closed	1
Destroyed in fighting (Yungping)	1.

Shansi.

Number of Hospitals	10
Running normally under foreign or Chinese supervision	4
Under temporary arrangement with Chinese staff.....	5
Closed (Pingyangfu—for lack of staff)	1.

Shensi.

Number of Hospitals	2
Running under temporary arrangement with Chinese staff (Sian)	1
Destroyed (Sanyuan—三原)	1.

Kansu.

In this province fairly normal work was carried on in both hospitals at *Lanchow* and *Hochow* (河州) under Dr. Rand.

Shantung.

Number of Hospitals	19
Running normally under foreign or Chinese supervision	11
Under temporary arrangement with Chinese staff	7
Information not obtained	1.

The situation here was rapidly improving.

Honan.

Number of Hospitals	13
Under temporary arrangement with Chinese staff	1
Closed (a small dispensary being kept at <i>Yenching</i> —郢城)	12.

(1324) Ibidem, 1930, p. 588.

(1325) Ibidem, p. 707, 1931, p. 687.

The following observations may be added to the above tabulation:

1. Though detailed information is lacking in some respects, it can be gathered from available sources that most of the institutions closed down were sooner or later re-opened.
2. Many hospitals were able to keep open with a Chinese staff, while some closed down only when foreigners had to leave under consular orders. This naturally tended to show to all concerned the value of Chinese doctors, and it may now be said that practically all missionary hospitals possessing more than one doctor, have one or more Chinese graduates on their staff, while many institutions are entirely run by them.
3. Equally pleasing is the process of devolution carried on in a number of missionary hospitals. It may be truly said that a consoling feature of the 1927 events lies in the fact that they accelerated the progressive endeavours to have missionary hospitals supported and managed by the Chinese themselves—thus helping to realize the dream of the early medical missionary pioneers.

CHAPTER XIV

PERIOD 1928—1936

CONSOLIDATION OF MEDICAL WORK UNDER GOVERNMENT AUSPICES

Ministry of Health—Registration of Medical Practitioners—Medical Federation—National Board of Health—Joint Committee on School Health—Chinese Pharmacopoeia—Bureau for Control of Narcotic Drugs—Cooperation with the League of Nations Health Section—National Quarantine Service—National Health Administration—Central Field Health Station—Highway Health Service—Provincial Public Health Work—Municipal Public Health Work: Shanghai—Nanking—Peiping—Amoy—Rural Public Health Work—Maternity and Infant Welfare—National Midwifery Board—National Midwifery Schools—Provincial Midwifery Work—National Child Welfare Association—School Health Work—Industrial Health Work—Anti-Tuberculosis Work—Leprosy Work—Birth Control Movement—Crema-tion—Army Medical Services—Railway Medical Service—Postal Medical Service—Relief work during national disasters—Activities of medical associations.

National Commission on Medical Education—Faber's Report—Curricula for medical schools—Distribution of medical graduates in China—Problem of State Medicine—Training of public health workers—Dental Education—Pharmacy schools—Education of Nurses—Private Midwifery schools—Boxer Indemnity Fund—Holt Scheme—Henry Lester Institute of Medical Research—Institute of Legal Medicine.

Hospital activities—Analysis of hospital problem in China.

One of the first and at the same time the crowning feat of public health activities in China during the period 1928-1936 was the establishment of a *Ministry of Health* (衛生部) under the National Government in Nanking on November 1, 1928. It was first headed by Mr. Hsueh Tu-pi who, though not a medical man, was an ardent believer in modern public health work. One of the Vice-Ministers (and later on Hsueh Tu-pi's successor) was Dr. J. Heng Liu (劉瑞恆), M.D. (Harvard) who, shortly after the establishment of

the Ministry, gave an excellent survey of its work before the China Medical Association Conference (1926).

This comprised:—

I. *Two Advisory Boards:*

(1) *Central Board of Health (中央衛生委員會).*

- A. Purpose—to confer on matters of general importance and interest.
- B. Members—Minister of Health, Political and Administrative Vice-Ministers, Chief Technical Expert, Head of National Hygienic Laboratory and 17 members appointed by the Minister of Health.
- C. Terms of office—one year.
- D. Meetings—twice a year (1927).

(2) *International Advisory Council (顧問).*

- A. Purpose—to benefit from the experience of international and other foreign health organizations through foreign experts.
- B. Term of office—indefinite.
- C. Meetings—to be called at convenient intervals.
Invitations to act as honorary advisers were sent to:
Dr. L. Rajchman, League of Nations, Health Section;
Dr. Victor G. Heiser, International Health Division, Rockefeller Foundation;
Sir Arthur Newsholme, Formerly Chief Medical Officer, Local Govt. Board, England.
The former two gentlemen accepted, but the last declined because of advanced age.

II. *Five administrative Departments in the Ministry:*

(1) *Department of General Administration (總務司).*

(2) *Department of Medical Administration (醫政司).*

- A. First Division—supervision of local health administration;
- B. Second Division—general medical practice and drugs;
- C. Third Division—health education.

(3) *Department of Health and Sanitation (保健司).*

- A. First Division—school health, maternal and child welfare and other health services;
- B. Second Division—industrial health, health insurance;
- C. Third Division—foods and drinks, sanitary inspection.

(4) *Department of Epidemiology (防疫司).*

- A. First Division—communicable diseases;
- B. Second Division—animal diseases;
- C. Third Division—epidemic prevention; quarantine.

(5) *Department of Vital Statistics (統計司).*

III. *Special Committees and Boards:*

A. *Secretariat (秘書室),*

B. *Counsellors (參事室)*—in charge of matters pertaining to legislation.

(1926) Nat. Med. Jl., 1929, p. 135 and China Med. Jl., 1929, p. 319.—The official regulations for the Ministry were published in the Nat. Med. Jl., 1929, p. 72.

(1927) The official regulations of the Board are published in the Nat. Med. Jl., 1929, p. 226.

- C. *Technical Experts* (技術室)—one chief and assistants, to assist the Departments in technical matters.
- D. *Editorial Committee* (編譯委員會).
 - 1. Organization—one head, editors and staff members appointed by the Minister;
 - 2. Duty—editing and translation of books and articles on health.

IV. *Health Organizations directly under the control of the Ministry of Health:*

- (1) *Health Departments of Provincial Governments* (衛生處).
- (2) *Health Departments of Special Municipal Governments* (衛生局).
- (3) *National Hygienic Laboratory* (中央衛生試驗所).
 - a. Division of General Administration;
 - b. Division of Pathology;
 - c. Division of Chemistry;
 - d. Division of Pharmacology;
 - e. Division of Immunology and Bacteriology.
- (4) *National Epidemic Prevention Bureau* (中央防疫處) (in Peiping).
- (5) *National Field Health Station* (中央衛生設施試驗所)—under contemplation.
 - A. Purpose to train health officers for the Health Bureaus and Departments.
 - B. Staff—one director and others holding concurrent posts in the Ministry.
- (6) *National Midwifery Board* (助產教育委員會) jointly with Ministry of Education.
 - a. Purpose—to promote midwifery education in the country;
 - b. Members—9 in number (two representatives each from the Ministries of Health and of Education; five others);
 - c. Term of office—two years;
 - d. Meetings—twice a year.

A *Sanitary Code* had already been published in August, 1928, by the Central Sanitary Bureau and amended in October immediately before the functions of the Bureau were taken over by the new Ministry of Health. This in its turn issued a tentative Sanitary Code in December, 1928, which in general followed the earlier one issued by the Central Sanitary Bureau.

This skeleton code covered the fields for which detailed regulations would be issued later on and gave an outline for training and security of tenure of health officers; establishment of health administration; provision of funds for health administration; and health programs during the initial stage for provincial administrations, special municipalities, non-municipal cities and county administrations. Two excellent sets of popular health rules were added.

The eight special health activities prescribed for municipalities and with which the code dealt in some detail, were:—

Statistics; general sanitation (including water, night-soil, foods and beverages and sanitary inspection); communicable disease control; control of medical practice; medical relief; medical protection (including school health, public health nursing, industrial health and peoples' health); public health laboratories; health education (both popular and in schools) (1328).

On December 29, 1928, the Ministry promulgated *Regulations for the Registration of Medical Practitioners* (1329). These unfortunately did not meet the expectations of medical practitioners who—to protect their interests—convoked a nation-wide conference at Shanghai at the end of October, 1929. Over 200 representatives attended under the presidency of Dr. Ts'u Ming-yi, M.D. (Paris), Member of the Central Executive Yuan. Various resolutions were passed, chief among which were:—

- (a) The establishment of a Medical Federation of China as a permanent association to protect the rights of its members;
- (b) Mutual protection of members against encroachment of the rights;
- (c) The sending of a deputation to the Minister of Health praying for the repeal of obnoxious clauses in the Registration Law, particularly in reference to the limitation of fees;
- (d) Improvement in medical education.

The aims of the Federation were fourfold, viz:—

- (a) To promote medical research;
- (b) Mutual protection of members against encroachment of their rights; to protect the medical practitioner;
- (c) To advocate the establishment of institutions for promoting sanitation;
- (d) To assist the Government with advice in drafting laws for the regulation of medical practice (1330).

Two *Health Conventions* were held by the Ministry at Nanking in February, 1929. At the first one, held from February 16 to 20 and presided over by Vice-Minister Hu Yu-wei (胡毓威), twenty to twenty-five heads of health organisations (mostly non-medical men) invited from practically all the provinces were present. Interspersed among them were health specialists, like Dr. Huang Tse-fang (Peiping), Chuan Shao-ching (S. H. Chuan—Tientsin), Hu Houki (Greater Shanghai), Hu Ting-an (Nanking) as well as the expert departmental heads of the Ministry. The well-organized conference was a great success; the lay members listened with the greatest interest to the expounding of modern health work throughout the world, made copious notes and returned to their cities with the firm intention of carrying out more scientific and up-to-date health measures than street-cleaning and garbage removal which formerly had been their principal objective.

The second convention of the *National Board of Health* took place between February 23 and 26 under Vice-Minister J. Heng Liu.

Various important matters were brought up for discussion. The outstanding resolution was in regard to the licensing of the *old-style physicians*. It was decided not to grant new licenses to them after December 31, 1930 (1331).

(1329) Published *ibidem*, p. 816.

(1330) *Ibidem*, p. 807; *China Med. Jl.*, 1929, p. 1248.

(1331) New regulations for the registration of old-style physicians, providing for their schooling and/or examination, were promulgated in 1935 (*China Med. Jl.*, 1935, p. 495).

Medical education was another important subject brought up for discussion. On account of the immediate need for modern doctors, the conference recommended that steps be taken to establish medical schools in all the provinces. The standards of schools were to be considered by a committee established jointly by the Ministries of Education and Health.

The Government was asked to see that as large a part as possible of the Boxer Indemnity Funds be allocated to Public Health.

The training of health personnel, the principle of establishing health demonstration centres, public health education of the people, school hygiene and maritime quarantine were other important subjects on which resolutions were passed. It will thus be seen that this conference was one of the most epoch-making events in the history of medicine in China(1332).

The first conference of the *Joint Committee on School Health* of the Ministries of Health and Education was held April 20, 1929, at the Ministry of Education in Nanking. The most important resolutions of this(1333) dealt with: (a) measures for the training of school health personnel; (b) recommendations for the local educational and health organisations to be instructed as to their separate functions; (c) a standard of school hygiene curriculum and (d) publication of a book on the "Essentials of School Hygiene" prepared by the staff of the Peiping Public Health Demonstration Area after proper revision and approval by the two Ministries.

Another noteworthy event was the display of health exhibits at the *West Lake Exposition of Hangchow* formally opened on June 6, 1929. Special mention must be made of: (a) A set of specially-made clay models sent by the Health Department of the Union Medical College and illustrating the activities of the experimental health station in the East City of Peiping; (b) The exhibits of the Manchurian Plague Prevention Service including a series of twenty-four large coloured health posters graphically describing the principal diseases prevalent in China (communicable and other) in vivid pictures and short crisp Chinese sentences(1334).

A second annual conference of the *National Board of Health* took place at Nanking from February 10-12, 1930, at the newly-built Central Hospital, when 44 representatives attended. The following are the more important resolutions adopted:—

1. All problems relating to pharmaceutics and the manufacture of medicine were referred to a committee composed of specialists. Through their recommendation the following resolutions were passed:

(1332) Nat. Med. J1., 1929, p. 202 and foll.

(1333) Ibidem, p. 471.

(1334) Ibidem, p. 462.

- (a) That the draft Chinese Pharmacopoeia prepared by the Ministry of Health be adopted, with a few minor changes and published in the next two or three months (This has appeared in June 1931).
 - (b) That the Ministry be recommended to make a thorough investigation of the drug-producing centres; to provide a place in a central location for the exhibition of native drugs; to establish a botanical garden and a research institute for the manufacture of drugs; to include pharmaceutical subjects in the curricula of the present medical schools; and to train pharmaceutical personnel abroad.
2. Industrial hygiene. Recommendations relating to industrial hygiene were made similar to the procedure already planned by the Ministry of Health for the training of personnel, demonstrations, and the health insurance of factory employees.
 3. The training of public health visitors to be initiated as soon as facilities are available.
 4. Rules governing the examination of unregistered physicians and pharmacists shall be promulgated at an early date.
 5. Recommendations were made on the joint control of medical schools by the Ministries of Education and of Health. These were to be submitted to the joint committee of the two ministries.
 6. Anti-opium drugs shall not be allowed to be sold in the market, because of the presence of narcotics. People wishing to rid themselves of the opium-smoking habit shall be taken care of by physicians only.
 7. The National Government shall be petitioned to set aside a special fund for state medicine and the prevention of epidemics.
 8. State medicine shall be introduced by health organizations whenever conditions are favourable.
 9. Recommendations shall be made to the Ministry of Justice in regard to training of personnel for legal medicine.
 10. Travelling clinics shall be introduced in rural districts(1335).

It will be noted that one of the most important decisions of this conference was to recommend the adoption of the *Chinese Pharmacopoeia I, 1930*. The task of preparing this had been entrusted in 1929 to Mr. Moody Meng, Ph. C. London, together with three other specialists. A valuable analysis of this tremendous work (in which he took a laudable part) was given by Prof. Bernard E. Read of the Peiping Union Medical College(1336):

With a large body of modern practitioners and an increasing number of modern drug stores representing every school of training, it was no easy task to come to a uniform standard. The Pharmacopoeias of U.S.A. 1921, Japan 1921, Great Britain 1914, and Germany 1926, formed the main basis of the work and chiefly from these about 670 headings were selected. The old Chinese Pharmacopoeia containing a fair number of drugs identical in botanical origin with western drugs, such local species and products, were also included whenever feasible (about 60).

The arrangement of the Pharmacopoeia was in the alphabetical order of the English-Latin titles, but the Chinese name stood at the

(1335) Ibidem, 1930, p. 124.

(1336) China Med. Jl., 1930, p. 519; see also Nat. Med. Jl., 1930, p. 281.

head of each item. The Chinese terms had been adopted by a Joint Conference called in 1929 by the Ministries of Health and Education. Their work was based upon the reports of the meetings of the Joint Terminology Committee held in 1925 and 1926, while the terms in use for the last four or five years were mutually agreed upon by representatives of the National Medical Association, China Medical Association, National Medical and Pharmaceutical Association, Kiangsu Educational Association, China Science Society, China Natural Science Society, the Board of Education and others specially appointed. Whenever necessary, the "German-Latin" name was inserted after the "English-Latin" one (e.g. Sodium-Natrium, Potassium-Kalium). The *metric system* of weight and measures was adopted.

It was proposed to have a pharmacopoeial committee to deal at once with such changes and additions as might be necessary for the next edition.

Prof. Read thus concluded his article:—

It should be said that this draft of the first Chinese Pharmacopoeia shows in general a faithful attempt to adhere rigidly to the highest scientific standards known. The differences of opinion concerning the details should not detract from the main issues. China needed a first class scientific standard, and there was needed a medium for checking the widespread empirical ideas concerning the use of drugs. There has been no compromise with the old school, and a good effort has been made to reach the ideal. The Board of Health is to be congratulated upon their work and all that it signifies in adding to the progress of modern medicine in this country.

The Chinese Pharmacopoeia actually saw the light in 1931; it contains 763 pages besides a copious index and supplement of 200 pages.

It must also be mentioned that in 1930 the Health Ministry promulgated *Regulations on the Importation of Hypodermic Syringes and Patent and Proprietary Medicines*. A special permit is now required for each of these, 277 such licenses having been issued by the end of 1934. A *National Bureau for the Control of Narcotic Drugs* was established toward the end of 1934. This is responsible for the control of importation and sale of narcotics, while manufacture is prohibited. Shanghai was made the only legitimate port of entry and the maximum quantities which may be purchased at any one time through the distributing agencies have been set down at fifty grams in the case of hospitals, medical schools or pharmacists, and ten grams in the case of individual medical, dental or veterinary practitioners.

In addition to these regulations a proper registration for dealers in drugs was arranged for. These have to apply to the National Health Administration, through the local authorities, for a license.

Each pharmacy must have in its employ at least one pharmacist licensed by the Government(1337).

Before continuing our scrutiny of the activities of the Ministry, it is necessary to discuss those of the Health Section of the League of Nations in China. This history dates back to the years 1922 and 1923, when Dr. F. Norman White undertook an enquiry into the prevalence of epidemic disease and port health organisation in the Far East as proposed to the Health Committee of the League by Prof. Miyajima.

Dr. Norman White embodied the results of his observations in a voluminous and interesting report(1338) which contained detailed information on the ports of Canton, Shanghai and Newchwang, general information concerning Manchuria and finally an outline of the then existing Sanitary Administration in Peking.

One of the most important results of Dr. Norman White's surveys and proposals was the establishment on March 1, 1925, of the League's *Far Eastern Epidemiological Bureau at Singapore*. This was principally made possible by the International Health Board of the Rockefeller Foundation which granted a subvention of Gold \$125,000 for a period of five years—it being expected that during this time the bureau would demonstrate its utility to such an extent that the various administrations concerned would look after its support (1339).

A group of Chinese medical leaders advised the Central Government, at the end of 1925, to invite the continuation of the survey begun by Dr. Norman White two years previously, in the hope that the creation of a skeleton National Quarantine Service might be recommended, and that it would serve as a nucleus for the setting-up of a modern public health service. Dr. Ludwig Rajchman, Medical Director of the League, who was visiting Japan during the interchange of health officers in 1925, was semi-officially asked to come to Peking to explore the ground. He reported to the Health Committee on April 26, 1926(1340), on the discussions he had had with the Minister of Interior (then in charge of the Central Sanitary Bureau), other officials and medical leaders. No official action could be taken during the succeeding period of civil war, but correspondence continued with the group which initiated the project.

(1337) Ibidem, p. 646; China Med. Jl., 1930, p. 693; J. Heng Liu. Chin. Year Book 1935-36, p. 1624.

(1338) Document C. H. 130, Geneva, 1923.

(1339) Annual Report of the Health Organisation, L. O. N., for 1925 (C. H. 442) pp. 10-11.—See also the Minutes of a Conference held in February, 1925, at Singapore under Dr. Norman White, when China was represented by Dr. S. C. Yin.

(1340) Document C. H. 433.

As already stated, as soon as the Ministry of Health was established, Dr. Rajchman was appointed one of the members of the International Advisory Council and in September, 1929, the League was officially asked

for the despatch of a sanitary mission from the Health Organisation to make a survey on port health and maritime quarantine.

This mission, consisting of Drs. Rajchman and Frank Boudreau arrived in Shanghai on November 9 of the same year (1929). After consultation with Dr. J. Heng Liu, the Minister of Health, several leading members of the Chinese Health Service (including Drs. Tse-fang Huang, Tsai Hung, P. Z. King, Yen Chih-chung and Wu Lien-teh) were instructed to accompany the Mission on its tour of certain ports and cities. These included Nanking, Hangchow, Shanghai, Tsingtao, Dairen, Mukden, Antung, Tientsin, Peiping, Amoy, Hong-kong and Canton besides smaller stations and villages. The work of investigation lasted until the end of December, and the Mission left China in the early part of January, 1930. On arrival at Geneva, Dr. Rajchman submitted a Report (1341) to the Health Committee of the League of Nations, which was finally accepted on March 7. Two outstanding measures were proposed, namely:

- (1) Collaboration between the Health Section of the League and the Chinese Ministry of Health in the solution of health problems in China;
- (2) Close harmony in the reorganisation of quarantine service in Chinese ports.

Among other matters agreed upon were:—

- (a) The immediate establishment of a national hospital in Hangchow (capital of Chekiang Province) which shall serve as a model for other cities;
- (b) The systematisation of medical training throughout the Republic;
- (c) The establishment of a central field health station equipped with useful appliances for the special needs of various places as well as the training of sanitary technicians and inspectors for outside localities;
- (d) Closer co-operation with the Eastern Epidemiological Bureau at Singapore, whose Director R. Gautier was to visit Shanghai for an intensive study of cholera problems.

In connection with cholera work, Shanghai was visited in February and March, 1930, by Dr. K. Stouman, Chief Statistician of the Health Section of the League, and then by Dr. R. Gautier (Director of the Eastern Health Bureau, League of Nations). The report submitted by the former contained an interesting summary of the situation, in which the point was raised that the disease might not be endemic in Shanghai but was always imported. Dr. Gautier's report is valuable in showing how progress made elsewhere in the investigation of cholera might be applied to local problems.

Two further experts sent by the League were (a) C. L. Park, M.D. (Melbourne), Chief of the Epidemiological Division, L.O.N., with whose activity we will deal soon; (b) Dr. B. Borcic, Director of the

School of Hygiene of Zagreb University (Yugoslavia) who came to China in summer, 1930, for a period of two years to work out a plan for collaboration between the Health Ministry and the Health Section. It was proposed that Dr. Borcic make a health survey of the different urban and rural centres in China so as to familiarize himself with the actual health conditions and needs of the country before drawing up definite recommendations (1342).

Before dealing with the institution of the National Quarantine Service under the Ministry of Health in 1930 a brief summary of earlier events is called for. The history of modern quarantine practice in China dates back to the year 1873, when measures were taken at Shanghai and Amoy against the threatening invasion of cholera from Siam and the Malay Peninsula, leading to the promulgation of elaborate quarantine regulations for the port of Shanghai already dealt with in an earlier chapter. Between that date and the year 1911 rules, modelled upon the Shanghai ones, were introduced at certain ports, such as Amoy (1882), Swatow (1883), Newchwang (1900), Hankow (1904) and Tientsin (1906), in order to cope with exigencies caused by plague and cholera in southern territories.

A fresh impetus was given to the work by the Manchurian Plague Epidemic of 1910-11, when laws were also enforced in ports hitherto unprovided for, such as Antung, Chefoo and Canton.

Provisions were made in 1912 for establishing a Sanitary Service for the port of Shanghai with a station accommodating 40 or more persons at Woosung on the South side of the Whangpoo River under the supervision of a British medical employee of the Customs. About the same time an agreement was entered into with a private Disinfecting Company (owned by Mr. W. Hughes) for the fumigation of any vessel requiring such treatment. Owing to some disagreement arising from the improper treatment of Chinese passengers, the Chinese Red Cross Society constructed a quarantine station of its own adjoining the Customs one, also with accommodation for 40 persons (1913).

Conditions remained practically unchanged at Shanghai until 1930, but improvements were made at other ports, notably Newchwang, Antung and Canton. The development of the work at Newchwang (Yingkow) was hastened by periodic threats of cholera invasions from Shanghai and bubonic plague from Hongkong; this has been described already in a previous chapter.

It has also been stated that the port of Antung was provided in 1923 with a quarantine station situated at Santao-Lungkow at the mouth of the Yalu River.

(1342) *Nat. Med. Jl.*, 1930, pp. 301, 306, 648.

In August 1926 the Canton Health Department created by the Municipal Council drew up quarantine regulations of its own to be put into effect from September 6, 1926. Since then the quarantine responsibilities have devolved upon this department, which employs three part-time medical officers for the inspection of vessels.

It may be added that at Tsingtao an efficient port health service has been running with suitable accommodation for 400 inmates since the German occupation in 1898. This work was continued by subsequent administrations.

On the whole, however, this variegated system of promoting quarantine work at different ports by non-specialised medical officers, who had to follow instructions from their lay-superiors in the Customs Service, and frequently from a board of consuls possessing different interests, proved more and more unsatisfactory as maritime commerce developed. For example, when cholera appeared at Shanghai, considerable time elapsed before reliable information was obtainable at other places. In the meantime the infection had travelled north and south to other Chinese ports, where again the responsible medical officer was obliged to wait for the unanimous decision on the part of the Commissioner and Consuls.

This lack of a centralised expert management could not but lead to constant friction and errors, and countries like the United States, Philippines and Japan adopted unnecessarily harsh restrictions against vessels from China entering their ports. Hence, when negotiations began for the taking over of quarantine work by a responsible division of the Ministry of Health early in 1930, Mr. T.V. Soong (then Minister of Finance), Mr. T.L. Chang, (then Director-General of the Customs Administration), Sir Frederick Maze (Inspector-General of Customs), the Consular body and various commercial organisations welcomed the proposed change. Dr. Wu Lien-teh was appointed Director of the newly-created National Quarantine Service and invited by the Shanghai Commissioner of Customs (who happened to be the son of the late Dr. W. W. Myers of Formosa) to establish temporary offices in some unoccupied rooms of the main Customs building on the Bund. In September 1930 the headquarters and Shanghai offices were moved into rooms on the fourth floor of the National City Bank building on Kiukiang Road. From July 1932 onwards the head office has been established at 2 Peking Road, Shanghai.

In November 1935, the National Quarantine Service was placed under the immediate jurisdiction of the National Health Administration (Wei Sheng Shu) in Nanking with Dr. J. Heng Liu as Director General and Dr. Wu Lien-teh retaining the directorship of the

Quarantine Service. The latter is assisted by a headquarters staff which includes a senior technical expert (Dr. C. Y. Wu) and a technical expert (Dr. Sung Chih-ai).

The reorganization also affected the northern Stations. Under the new arrangement Tientsin, Tangku-Taku and Chinwangtao are amalgamated into one unit named Tsin-Tang-Chin Quarantine Station with Dr. Fung Yun-fat (formerly head of Tangku-Taku Station) as the Officer-in-charge, assisted by Dr. Tang Tsung-nien (formerly in charge of Chinwangtao Station) and S. Y. Chu (formerly in charge of Tientsin Station).

In August 1936, an order was received from the Executive Yuan instructing the Director to proceed to Canton to take over Canton and Swatow Quarantine Stations and thus bring port health work in South China into line with established national practice.

Shanghai, as being the premier and most difficult port of China, was passed over by the Customs on July 1, 1930. The property comprised the inspection launch *Poochi* (a 48-years old vessel which had been handed down from Manchu times) and the hospital station at Woosung, as well as the tug *Junie* and the fumigation barge *Jessie Hughes* delivered by the Shanghai Disinfecting Company according to the terms of a ten-year contract between the proprietor and the Customs which had just expired.

With the expert assistance of Dr. C. L. Park who had been lent by the League of Nations, a set of Quarantine Regulations 1930 (perhaps the most up-to-date in the world), modelled after the 1926 Sanitary Convention of Paris, was drawn up for general use at the ports of China. From the first the Customs Administration, the different Consuls and shipping companies at Shanghai gave their loyal co-operation and thus facilitated the task of the newly-appointed Chinese Quarantine Officers who had graduated from well-known foreign and Chinese colleges. Emphasis was laid upon a good knowledge of English as well as of the Chinese language.

Since its inauguration in July 1930 the Shanghai work has made remarkable progress. The Ministry of Finance sanctioned an appropriation of \$36,000 for the expenses of the Central Office and \$60,000 for the Shanghai branch. This income was supplemented by receipts from the Fumigation Department which formerly went into private channels.

Since its establishment in 1930, the National Quarantine Service has made considerable progress in all departments of its activities. For instance, special attention was paid to the provision of adequate hospital accommodation at the different stations (Shanghai, Amoy, Hankow, Taku and Chinwangtao).

In Shanghai it was realized from the very beginning that the old hospital situated on the Pootung side of the river Whangpoo erected in 1912 following the disastrous effects of the first Pneumonic Plague Epidemic of 1910-11 was not only unsuitable for the purpose of an up-to-date quarantine station but did not contain those units that are essential to modern quarantine practice. To remedy this situation a suitable piece of land was acquired on the Shanghai side of the river at Woosung adjacent to the Customs Signalling Station.

On this site a fine series of buildings were put up, the station being ready for the reception of patients in 1935. The main building consists of a large medical inspection room, doctors' offices, dispensary, first and third class wards, shower baths, museum, library, laboratory, staff quarters, garage and observation tower. A separate building houses a disinfection chamber specially designed for the use of Cyanide gas. The grounds provide ample space for the erection of temporary isolation quarters in case of emergency.

A vital aspect of quarantine work is the medical inspection and fumigation of vessels. In Shanghai this side of the Service's activities has not been neglected. In order to cope with the ever increasing volume of work several new launches have been put into commission during the last few years.

Thus an eighty-five foot motor launch powered with a 120 h.p. Diesel engine was built in 1935; she is equipped with a Hughes' carbon-monoxide generating plant which was removed from the old hulk *Mu Lan* (木蘭). This fine new craft is named *Wu Yun II* (伍員二號), her predecessor, the steam launch *Wu Yun* (伍員) having been sold. In addition a specially built fumigating barge *Tsai Ao* (蔡鰲) is in commission. For boarding work there are two motor launches *Yueh Fei* (岳飛) and *Chung Ching* (仲景). Early in 1936 a fine motor launch, *Chang Chien* (張騫), was built in Shanghai for service at Taku.

As an example of the large volume of routine work performed by the Shanghai Quarantine Station, quarantine officers inspected in 1935 a total of 1,927 vessels aggregating 14,496,747 gross tons. These figures compare favourably with those of other years: for instance, in 1932, 2,324 vessels of 14,901,911 gross tons were inspected; in 1933, 2,196 vessels of 15,001,208 gross tons; in 1934, 1,943 vessels of 14,126,350 gross tons.

638 vessels with an under-deck tonnage of 1,448,832 were fumigated in 1935. Three gases were used viz. carbon monoxide-dioxide mixture, sulphur and Zyklon-B.

In addition to these activities the quarantine staff performed thousands of anti-smallpox vaccinations and anti-cholera inoculations.

Research into the various problems of plague, cholera and smallpox has been successfully carried out during the past few years. A rat flea survey undertaken since 1932 has produced some very interesting results. The National Quarantine Service has also published two manuals on cholera and plague besides annual reports and numerous original papers.

In addition to the routine quarantine work the Shanghai office has served as a central Anti-cholera Bureau for the collection and distribution of information received from the three municipalities of Greater Shanghai, International Settlement and French Concession. This bureau prints standardised forms for cholera cases admitted into the various hospitals and sends out medical officers to personally collect and confirm information from all available sources. It is in close touch with the League of Nations' Eastern Health Bureau at Singapore, and also issues bulletins to foreign and Chinese papers on the situation. By this means the interest of the public is aroused, leading to better understanding and fuller co-operation.

The port of Amoy was taken over by the Quarantine Service in January 1931 and Dr. F. S. Wong (Wong Fu Sheng 王福生) who had gathered considerable experience of local quarantine work under successive British doctors, was appointed Quarantine Officer-in-charge. Since Manson's time in the 'seventies there has been a huge amount of emigration (running sometimes to hundreds of thousands annually) from Amoy to territories in the South, particularly Dutch East-Indies, British Malaya and the Philippines. The Customs Medical Officers, serving concurrently as Port Health Officers, used to undertake vaccinations of the passengers and inspection of the emigrant vessels which resulted in big incomes to themselves, so much so that for decades it was customary for the European doctors, after having made a fortune, to *sell the practice* to their successors. In December, 1929, an American ex-missionary doctor replaced his British *confrère* in the lucrative post, in addition to his duties as Medical Officer to the United States Public Health Service.

When Amoy passed under the control of the National Quarantine Service, a radical change was effected. A Chinese was appointed as regular Quarantine Officer on a fixed salary of \$400 per mensem, his assistant being a young Britisher graduated in Australia. One composite standard fee of \$1.00 for vaccination and inspection was charged to all emigrants and deck-passengers whatever their destination, the hours of attendance ranging from nine in the morning to five in the afternoon.

Admiral Lin Kuo-keng, Governor of the district, kindly presented a suitable piece of unoccupied land (measuring 45 mou) situated on

the sea beach at Amoy-keng exactly opposite the Amoy University. Building operations were forthwith started and by July, 1931 an Infectious Diseases Hospital with accommodation for 30 beds was ready for occupation, serving both the shipping community and the city. In September 1933, a new block was built behind the old hospital, consisting of first-and third-class wards for sixty persons, an emigrants' ward for those rejected on account of some disease that would preclude their admission into the ports of entry (Singapore, Siam, French Indo-China, Netherlands India, Philippines), and quarters for medical and nursing staffs. In 1936 construction of a six-storeyed office and medical inspection building on the new bund was commenced; this will be formally opened in January 1937.

The Amoy station has done excellent work during the epidemics of the past few years, especially the bubonic plague outbreaks of 1931 and 1935, and the smallpox and cholera epidemics of 1931 and 1932.

Hankow was taken over in November 1931, following the disastrous Central China flood of the previous summer. This station has developed rapidly and is at present doing fumigation work in addition to acting as an important quarantine unit for the middle Yangtze. Thanks to the Customs, a suitable building on the Hanyang shore of the Yangtze River was leased at a nominal figure for use as a laboratory and hospital in 1936.

The northern ports of *Tientsin*, *Taku-Tangku* and *Chinwangtao* were transferred to the control of the service in April, 1932, and have been undergoing reorganization to make the work uniform with that of the other stations. Tangku has progressed considerably and, in addition to the routine quarantine work of the port, the staff has undertaken the fumigation and disinfection of infected vessels (1843).

Dr. J. Heng Liu was elected Vice-President of the Advisory Committee, Health Section of the League of Nations, in 1930. Unable to proceed to Geneva himself Dr. P. Z. King attended the session in October of that year. At the succeeding meeting in May, 1931, Dr. Wu Lien-teh was present and read an important communication on a Three Year Plan for the Chinese National Health Service in the name of Vice-President Dr. Liu. This announcement was warmly greeted by those present, including such prominent figures in the world of science as Bordet (Belgium), Jitta (Netherlands), Cantacuzène (Rumania), Jorge (Portugal), G. Buchanan (Great Britain), Surgeon-General H. Cumming (U.S.A.), T. Madsen (Denmark), etc. The plan

(1843) Reports of the Nation. Quar. Service 1931-1935; Insp.-General F. W. Maze, Customs Circular No. 4304 (2nd Series); C. Y. Wu, Chin. Med. J., 1935, p. 969; J. Heng Liu, Chin. Year Book 1935-1936, p. 1567.

dealt with such fundamental issues connected with the health policy of the National Government that it is herewith published in full:—

Recent developments in China have resulted in the amalgamation of the Ministry of Health with the Ministry of Interior. I have, in consequence, been appointed Director of the new National Health Administration. The fact that together with its auxiliary organisations more technical personnel will be provided under the new constitution approved by the Legislative Yuan than under the former Ministry of Health implies that the health service will be placed on a more solid foundation than before.

The Central Field Health Station (中央衛生設施實驗處).

In order to make its organisation more effective financially as well as politically, the Government will put the Central Field Health Station as one of the technical services under the new National Economic Council (全國經濟委員會). The old buildings of the former Ministry of Health will be used pending the erection of new buildings which will be started shortly and are expected to be completed in 1932. The annual budget for this station for the next three years is \$514,640. (See Annex II).

With the object of developing it into a field station for North China similar to the Central Field Health Station in Nanking, the activities of the *National Epidemic Prevention Bureau* (Peiping) as well as its budget, will be gradually expanded. (See Annex I, item 4).

Similarly, the activities of the *North Manchurian Plague Prevention Service* will likewise be so expanded as to enable it to serve as the Field Health Station for the three north-eastern provinces. The increase in budget for this organisation is shown in Annex I, item 5.

Since July 1, 1930 the *National Quarantine Service* has already taken over the quarantine work for the ports of Shanghai and Amoy. Arrangements have been made by the Service to take over the port of Swatow as from April 16 of this year. It is scheduled that the remaining quarantine services, namely, those of Canton, Chungshan (Tongkawan), Foochow, Hankow, Tientsin, Newchwang, Antung, Tsingtao, Chinwangtao, Chefoo, and Weihaiwei will be inaugurated by the Service before the end of 1932. The expenditure for these services will be drawn as heretofore from the maritime customs (see Annex I, item 16).

In regard to *midwifery training*, thanks to the success attained by the First National Midwifery School in Peiping the further establishment of three national midwifery schools in the cities of Nanking, Canton and Hankow will soon be undertaken. The program for these is as follows:

Second National Midwifery School, Nanking.....	1931
Third National Midwifery School, Canton.....	1932
Fourth National Midwifery School, Hankow.....	1933

Budgets for the above schools are shown in Annex I, items 10, 11, 12 and 13. Plans have been made for the establishment of provincial midwifery schools in Hopei, Kiangsu, Chekiang, Hupeh and Kwangtung within the next three years.

A school for the training of Public Health Nurses will be founded in Nanking in 1932, budget for which will be \$60,000 annually. (See Annex I, item 14).

The training of *Public health officers* and of *sanitary inspectors* will be undertaken by the Central Field Health Station. An annual sum of \$24,000 is included in the budget of the Central Field Health Station for this purpose. (See Annex II, item c).

As *field activities* for the Central Field Health Station a municipal health demonstration in Nanking, a rural health demonstration in Tangshan and a *hsien* health demonstration will be started in 1931. Their annual budgets

will be \$60,000, \$18,000 and \$60,000 respectively. (See Annex I, items 7, 8, and 9).

Full co-operation will be given by the Central Field Health Station to *municipal health organisations* of large cities with the object of having them fully developed during the next three years in order that they may serve as demonstrations for the provinces.

Related Activities.

1. *Health Education.* Arrangements have been made to commence health education courses in the Normal College of the Central University in 1931. The next two years will witness similar arrangements in two other universities, one located in Peiping, and the other in Canton.

2. *Army Medical Service.* The Central Field Health Station will also assist the National Army Medical Corps in reorganizing an army medical school to serve as an experimental medical school.

3. *Chinese Drug Research Institute.* A special appropriation has been for this purpose. See Annex I for budget. The National Health Administration will appropriate \$24,000 per annum for this institution.

4. *Opium Hospital.* Complying with the wish of the National Government to suppress opium consumption in China, a model opium hospital will be established to study the problems of opium addiction and its treatment.

5. *Anti-cholera Campaign in Shanghai.* Thanks to the co-ordination of anti-cholera activities of the Chinese and foreign health authorities of Shanghai as initiated by me last year, a valuable report has been submitted by the Quarantine Service (Report Series I) for future guidance. This joint work will be intensified this year, and a meeting to that effect has been held on April 10, 1931.

ANNEX I.
HEALTH BUDGET 1931-1933.

	<i>Capital</i>	<i>First Year</i>	<i>Second Year</i>	<i>Third Year</i>
1. Wei Sheng Shu))(approved)		\$420,000	\$420,000	\$420,000
2. Field Station)) \$1,000,000		514,640	514,640	514,640
3. Central Hygienic Laboratory		59,880	76,200	100,000
4. National Epidemic Prevention Bureau		112,870	180,000	180,000
5. North Manchurian Plague Prevention Service		150,000	250,000	250,000
6. Central Hospital, (contribution for additional building)	350,000	300,000	360,000	360,000
7. Nanking City Field Demonstration	50,000	60,000	60,000	60,000
8. Tangshan Rural Field Demonstration, (contribution)	10,000	18,000	18,000	18,000
9. Hsien Field Demonstration	50,000	60,000	60,000	60,000
10. First National Midwifery School, Peiping	100,000	41,016	60,000	60,000
11. Second National Midwifery School, Nanking, (for equipment)	30,000	—	60,000	60,000

	<i>Capital</i>	<i>First Year</i>	<i>Second Year</i>	<i>Third Year</i>
12. Third National Midwifery School, Canton	100,000	—	60,000	60,000
13. Fourth National Midwifery School, Hankow	100,000	—	60,000	60,000
14. Nursing School, Nanking ..	100,000	—	60,000	60,000
15. Research fund to the Chinese Drug Research Institute		24,000	24,000	24,000
16. Quarantine Services:				
National Quarantine Service Headquarters		36,000	36,000	36,000
Shanghai		60,000	60,000	60,000
Amoy		24,000	24,000	24,000
Swatow		24,000	24,000	24,000
Canton		36,000	36,000	36,000
Newchwang		24,000	24,000	24,000
Antung		18,000	18,000	18,000
Tientsin		—	24,000	24,000
Tsingtao		—	24,000	24,000
Chinwangtao		—	24,000	24,000
Hankow		—	24,000	24,000
Chefoo		—	18,000	18,000
Weihaiwei		—	18,000	18,000
Foochow		—	18,000	18,000
Chungshan		—	18,000	18,000
Total	\$1,890,000	1,982,406	2,652,840	2,676,640

ANNEX II.

ANNUAL BUDGET OF CENTRAL FIELD HEALTH STATION
NANKING.

A. Salaries and Wages		\$256,200
I. Salaries	\$240,720	
1. Officers of selected appointment	\$50,400	
2. Officers of recommended appointment	72,000	
3. Officers of delegated appointment	82,080	
4. Employees	36,240	
II. Wages	15,480	
1. Carpenters, Photographers, etc.	4,680	
2. Servants	10,800	
B. Running Expenses		\$94,440
I. Supplies, stationery, etc.	13,200	
II. Correspondence	6,000	
III. Printing	20,400	
IV. Rent	14,400	
V. Upkeep	28,440	
VI. Miscellaneous	12,000	

C. Equipment, etc.		\$134,000
I. Equipment	38,000	
1. Instruments	9,600	
2. Books and periodicals	4,800	
3. Others	23,600	
II. House and furniture.....	12,000	
III. Construction	84,000	
1. Courses for health officers, inspectors, nurses, etc. ..	24,000	
2. Demonstrations and grants- in-aid in special activities	60,000	
D. Special Expenses		\$24,000
I. Special	6,000	
II. Travelling expenses	18,000	
E. Contingent		\$6,000
TOTAL		\$514,640.

It is interesting to compare these figures with the Health Budget for 1936-37.

1. Wei Sheng Shu	\$288,000
2. Central Hospital	420,000
3. Central Midwifery School	42,000
4. First National Midwifery School	55,008
5. Shanghai Quarantine Station	108,000
6. Amoy Quarantine Station	40,800
7. Wuhan Quarantine Station	12,000
8. Tsin-Tang-Chin Quarantine Station	26,400
9. Northwest Epidemic Prevention Bureau	50,000
10. Mongolia—Suiyuan	28,800
11. Mongolia Health Bureau	42,000
12. The Shanghai College of Medicine	298,000
13. The National College of Dentistry	84,000
14. The National College of Medicine and Pharmaceutics	26,000
15. The Medical Legal Institute	66,000
16. National Epidemic Prevention Bureau	112,800
17. Institute of Tropical Medicine	4,200
18. Sun Yat-sen Medical College	100,000
19. National Institute of Chinese Medicine	60,000

EXTRAORDINARY EXPENDITURE

1. Central Hospital	94,642
2. Mongolia Health Bureau	20,000
3. The Shanghai College of Medicine	60,000
4. For Health Construction Work	860,000
5. For Special Health Work	274,716
6. National Epidemic Prevention Bureau	148,716
7. Construction Fund for Sun Yat-sen Medical College	250,000

It was not possible to realize all the plans of the 1931 memorandum; for instance, as discussed in an earlier chapter, the work of the Manchurian Plague Prevention Service came to an end in 1932. In most respects, however, excellent progress was made. From a

recent summary by Dr. J. Heng Liu(1344) it can be gathered that the National Health Service is now composed of the *National Health Administration* and the *Central Field Health Station*. The former, previously under the Ministry of Interior, but since 1935 under the direct jurisdiction of the Executive Yuan(1345), is primarily administrative and looks after matters of legislation, supervision and registration. The work of the National Health Service is supplemented by the following *subsidiary organizations*:—(1) National Quarantine Service; (2) National Epidemic Prevention Bureau with headquarters now at Nanking and branch laboratories in Peiping and Lanchow (established in 1934); (3) The Northwest Epidemic Prevention Bureau (established in 1934, producing biological products primarily for the control of animal diseases); (4) The Central Hospital in Nanking; (5) The Central Hygienic Laboratory; (6) The First National Midwifery School; (7) The Central Midwifery School; (8) The Central School of Nursing; (9) The Tangshan Rural Health Station.

In addition, the following four *Commissions* were established jointly with the Ministry of Education:—National Commission on Medical Education; National Midwifery Board; National Commission on Nursing Education; National Commission on Health Education.

The *Central Field Health Station* owed its inception to a plan worked out in cooperation with the League of Nations Health Experts which was approved by the Executive Yuan in December, 1929(1346). Pending the erection of a new building a part of the premises of the National Health Administration was remodelled to serve as a provisional station. Work was commenced in May 1931, and comprised originally four departments (1. Dept. of Health Education; 2. Dept. of Sanitary Engineering; 3. Dept. of Bacteriology and Epidemic Disease Control; 4. Dept. of Chemistry and Pharmacology).

In the autumn of 1931 Prof. M. Ciuca, Secretary of the Malaria Commission of the League of Nations, participated in making a malaria survey, and together with Dr. O. K. Khaw, Assistant Professor of Parasitology at the Peiping Union Medical College, he helped in setting up the Department of Parasitology.

The Station did excellent field working during the Yangtze floods of 1931 and the 1932 cholera epidemic, and also assisted in the rehabilitation of the war zones of the Sino-Japanese conflict in and around Shanghai by the establishment of temporary health stations and laboratories.

In the autumn of 1932 two more departments, namely for Medical Relief and Social Medicine and for Epidemiology and Vital Statistics

(1344) J. Heng Liu, Chin. Year Book 1935-36, p. 1567.

(1345) Chin. Med. J., 1935, p. 706.

(1346) First Rep. of the Central Field Health Station 1931-33, Shanghai.

were organized. Plans for the new building on a large piece of land, situated along Huangpu Road, were completed and building operations started in October 1932. The building was completed in August 1933.

Soon afterwards, simultaneously with the establishment of the Central Midwifery School in Nanking in autumn 1933, a Department of Maternity and Child Health was added to the Central Field Health Station. The latter also participated in the activities of the newly established Central Factory Inspection Bureau under the Ministry of Industries and a Department of Industrial Health was created.

In autumn 1931 the Station was officially transferred to the National Economic Council and an advisory and supervisory Health Committee of eight members was organized. In the autumn of 1933, when regulations governing the constitution were promulgated (1347), Dr. J. Heng Liu was formally appointed Director and Dr. P. Z. King, Vice-Director.

In view of the rapid development of highway reconstruction in the Central and Eastern provinces of Chekiang, Kiangsu, Honan, Kiangsi, Hunan and Hupeh, the Central Field Health Station organized a *Highway Health Service* which began to function in spring 1933 (1348). Its object was not only to give medical attention to workmen and passengers, but to prevent the spread of communicable diseases and to undertake measures of sanitation and health propaganda. As will be gathered from the following figures extracted from Dr. J. Heng Liu's 1935-36 Report (1344), the scope of the work was very considerable:—

	Anhui	Chekiang	Fukien	Honan	Hupeh	Kiangsi	Kiangsu
	(1934):	(1934):	(1934):	(1934):	(1934):	(1934):	(1933):
Clinical attendances	22,617	19,456	13,367	12,735	8,558	26,935	4,435
Curative 'services	33,494	19,984	16,985	15,343	11,681	28,711	4,742
Preventive work*	18,150	2,540	382	7,340	665	26,131	5,954
Health propaganda attendance	17,310	3,515	23,750	96,450	2,850	24,870	2,570

*Including vaccination against smallpox, cholera, etc., anti-malaria work; sanitary inspections; disinfection of wells.

Plans for health administration throughout the country provide for a bureau of public health in each provincial and each municipal government and for a hospital (or rather county health centre) in each *hsien*. According to the above mentioned report (1344) marked progress in *provincial public health work* took place during the year 1934. Provincial Bureaux of Public Health with subsidiary

(1347) Published Chin. Med. Jl., 1934, p. 85.

(1348) Chin. Med. Jl., 1933, p. 821.

provincial hospitals, midwifery schools and hygienic laboratories were introduced in the provinces of Kiangsi, Hunan, Shensi, Kansu, Chinghai and Ninghsia(1349). In some provinces such as Chekiang, Kiangsu and Kwangsi, although a provincial bureau of public health is not yet organized, the provincial hospital is carrying out much public health work by way of epidemic prevention, laboratory service, etc. In 1936 plans were also made for establishment of a provincial health administration in Fukien, the Central Field Health Station undertaking to train the personnel necessary for this purpose (1350).

The spirit of progress imbued into public administration by the National Government naturally exerted a great influence upon *municipal public health work* as well as upon other branches of local government. Until 1929 independent municipal departments of public health had come into existence in nine cities, but unfortunately in most of these the management of public health matters was soon transferred back to the bureaux of Public Safety. As pointed out in an editorial of the *Chinese Medical Journal* in 1932(1351), two factors were mainly responsible for such a retrograde step. On the one hand, the elaborate administrative apparatus including public health departments had been set up in not a few of the nine cities without due consideration for its proper financing. On the other hand, there was a tendency to think doctors with general medical qualifications fully capable of running the newly created health departments instead of entrusting them to health specialists. The reason that independent departments continued to exist in cities like Canton and Shanghai seemed therefore due not only to the sound financial status of these communities but also to the skilful management of the departments tending to create support from public opinion.

A valuable survey of urban public health practice in China, based upon data from 19 cities possessing a population of 100,000 or more, was published in 1934 by Grant and P'eng(1352). The following conclusions were arrived at:—

It is impressive, after a review of the health conditions in the 19 cities, to note that the problem of public health in China is more a question of competent personnel than of finance. While many cities do not provide adequate funds for health work, achievements are negligible in other cities where funds are available.

Street cleaning stands out as the first concern of the health service. Erroneous as the idea may be, it constitutes the most accessible channel

(1349) See also Chin. Med. Jl., 1934, p. 1173 and 1934 Rep. of the Central Field Health Station, p. 47.

(1350) Chin. Med. Jl., 1936, p. 749.

(1351) Ibid., 1932, p. 1117.

(1352) Ibid., 1934, p. 1074.

for the introduction of modern measures of public health. In spite of its superficial significance, the public health worker may, for a time, have to place the main emphasis of any work on sanitation of environment.

Medical relief ranks second in importance. There is community consciousness for the need of this service. Many cities are spending large sums on it. The health officer should, therefore, devote a large portion of his time and of the money available for medical relief.

The most valuable functions of the public health service, such as maternity and child welfare, school health, communicable disease control, etc., challenge a vigorous effort on the part of the health officer for their development.

While thus in many cities the municipal health organisation left much to be desired, very satisfactory progress was made in a few. The work at Canton has been discussed in a earlier section of this book so that attention may be concentrated upon Shanghai, Nanking and Peiping. A report published in 1929 by Dr. Houki Hu, Public Health Commissioner of *Greater Shanghai* stated that the work was carried out by four divisions, the first being responsible for vital statistics, medical registration and general office administration; the second, for health education and sanitary supervision; the third for meat and dairy inspection. A newly established fourth division was in charge of communicable diseases control, hospital supervision, school hygiene and public health nursing. A few of these activities deserve special discussion:—

Medical registration.—The first registration was carried out in 1926 when about 400 western-trained and 1,300 old-style practitioners were recorded. A second registration took place in 1929 when committees were organized to examine and register physicians, midwives, pharmacists and dentists. A total of 108 modern-trained and 371 old-style practitioners, 14 midwives, 54 pharmacists and 50 dentists passed and were entered in the lists.

Health education was given through posters and pamphlets. A monthly magazine was also published and health news sent every week to newspapers. The sanitary inspectors and school nurses also did some educational work.

School Health Service.—This branch of the work, originally consisting of a travelling clinic for a few schools with one physician and one nurse, was considerably enlarged, employing now three full time physicians, two part-time dentists, one part-time eye-ear-nose-throat specialist and four full-time nurses to take care of 14 municipal schools with about 19,000 pupils.

Public Health Nursing.—This was a new activity, the staff consisting originally, in addition to the four school nurses, of three health workers among the poor and one in communicable disease control. *Laboratory.*—A laboratory was connected with the Health Department from the first. Possessing initially a small staff under Dr. S. F.

Chiang, it laid main stress upon bacteriological examination of the city water but undertook other work as well. The service for registered physicians, even including Wassermann tests, was free of charge. In 1929 the laboratory was removed to Chapei where it was housed in a building formerly used as a gambling club and requisitioned by the new Government. Municipal laboratory work was now carried on together with that of the *Central Hygienic Laboratory* of the Health Ministry. Though somewhat hampered in the matter of space, the institute, which is under the directorship of Dr. M. Y. Dzen (程基頤), is well equipped and performs its work, including the mass preparation of smallpox, cholera and other vaccines, in an excellent manner. The laboratory suffered severely during the Sino-Japanese troubles in 1932, though fortunately escaping the total destruction originally reported. It was then decided to transfer the Central Hygienic Laboratory to Nanking so as to put its activities under the immediate control of the National Health Administration.

In June 1928, the Chapei Waterworks Company opened its *new waterworks* at Woosung. The older waterworks (founded in 1908) with its intake from Soochow Creek had proved unsatisfactory when during the 1926 cholera epidemic, samples taken in July from the intake as well as from the effluent from the filterbeds and a tap from the mains had yielded specific vibrios. The intake of the new plant was from the Whangpoo River where strong pumps led the water to settling tanks, then coagulation chambers with alum and finally, a series of rapid sand filters. The filtered water was passed through an automatic chlorine apparatus of the most modern type before distribution. The output at first was 7,000,000 gallons a day, but with the completion of all filters 12,000,000 gallons became possible so that, together with the five million gallons from the Nantao waterworks, the needs of Greater Shanghai could be fully met. It is gratifying to note that these waterworks continue to give satisfactory service. Great attention is paid to connect districts hitherto deriving their water from shallow wells, ponds, etc., with the waterworks system and also to supply the poor with such clean water. According to a report by Dr. Li Ting-an in 1935, 15 free water supply stations have been built to provide for the needs of the poor.

Another noteworthy event of 1928 was the opening in October of a *Health Demonstration Station* at Woosung (吳淞衛生事務所) under the joint control of the Greater Shanghai Health Department and the Department of Preventive Medicine and Public Health of the National Central University. It was situated on an advantageous site with the railway station on one side and the medical school on the other. The building used had formerly served as a military stable but several thousand dollars were spent in remodelling and equipping

it. The work was divided into three branches, viz., Division of Sanitation (financed by the Municipality), Division of Clinics, and Public Health Division which took care of school and factory hygiene, communicable diseases, maternity and infant welfare and public nursing. Unfortunately the station was demolished by continuous bombarding from the Japanese warships in February 1932, thus temporarily interrupting this useful work.

The *extensive school health work* mentioned in Dr. Houki Hu's report was initiated in 1929, when some members of the Peiping School Health Service joined the staff of the Greater Shanghai Health Department. It is noteworthy that at the time no similar work was done in the two foreign settlements of Shanghai(1353).

Dr. Houki Hu was killed, when only 38 years of age, in a motor car accident on October 10, 1932. To perpetuate his memory a scholarship was founded by the Health Committee of the League of Nations to be awarded annually to a public health worker for postgraduate studies abroad(1354).

A worthy successor was found in Dr. Li Ting-an, who for some time had served as chief of the Model Health Experimenting District of Kaochiao under the Health Bureau of Greater Shanghai and had afterwards taken a meritorious part in public health work at Peiping.

According to reports published by him in 1934 and 1935, the Public Health Bureau of Greater Shanghai had in 1932-33 a budget of \$355,000, representing 3.3 per cent of the total municipal income. Its program provides for a head office with attached central hospital and laboratory as well as for a public health station in each of the seventeen city districts.

The head office was transferred in 1934 from Nantao to the new Civic Centre at Kiangwan. A Central Municipal Hospital with 200 beds and a new Laboratory situated nearby were completed in 1935; the former was opened in October 1936 with Dr. Oong Tze-loong as superintendent and will serve as a teaching hospital in connection with the Tung-chi Medical College. Public Health Stations have been established at Kaochiao (1929), Woosung (1933), Kiangwan (1934), Nantao (1934), Chapei (1935).

The activities of the Bureau may be grouped as follows:—

1. Environmental Sanitation (water, food, housing, refuse disposal, etc.);
2. Control of both acute and chronic communicable diseases;
3. Vital Statistics;
4. Medical Services, including maternity and infant hygiene, pre-school and school health, industrial health, clinic and hospital services and registration of hospitals, physicians, midwives, etc.;
5. Public Health publicity;
6. Laboratory services.

(1353) J. Heng Liu, Chin. Med. Jl., 1934, p. 72.

(1354) Ibid., 1932, p. 1157, 1933, p. 942.

The following details of this work may be noted:—

Environmental Sanitation.—The waterworks are supervised and, as mentioned, every endeavour is made to promote the consumption of their water. At the same time great attention is paid to the disinfection of shallow wells and ponds still amply resorted to. Likewise the manufacture and sale of soft beverages, amply consumed during the warm season, are strictly supervised.

Inspection of animals for slaughter and of their meat is enforced, a staff of 21 veterinarians being available for this purpose. Plans have been completed for the erection of an up-to-date slaughter-house.

Control of Communicable Diseases includes, besides the reporting and isolation of patients and care for their contacts, immunization against cholera, typhoid and smallpox which are carried out on a very large scale. A modern isolation hospital with a capacity of 150 beds was opened in Chapei in 1934.

Child and Maternity Health measures include the training and supervision of native midwives, home visits by trained public health nurses, ante-natal care, free delivery service, post-natal care, and health education of the parents. These services are most actively carried out at Kaochiao, Woosung and Kiangwan.

The *School Health Service* has been extended to 50 municipal schools with about 32,000 pupils.

In view of the high medical fees *clinical services* have been extended, six clinics, two 30-bed hospitals and one 160-bed hospital being available in various parts of the city for free treatment of the poor. Three hospitals for narcotic addicts were opened in 1934 and 1935 respectively, with a total capacity of 500 beds.

The Department of Public Health in the *International Settlement* was taken charge of in 1922 by Dr. C. Noel Davis, who was succeeded as Health Commissioner in 1931 by Dr. J. H. Jordan. From a comprehensive report published in 1928, we learn that sixteen physicians were in the department, nine of whom were Chinese. Its divisions were (1) Administration (also in charge of cemeteries); (2) Laboratories (under Dr. Jordan with pathological, chemical and pharmaceutical sections); (3) Hospitals (caring for hospitals, free clinics and goals (1355) as well as nursing services, medico-legal matters and examination of candidates for municipal employment); (4) Food, Dairies and Markets (the latter 13 in number); (5) Sanitation (with four districts, each with a number of Branch Health Offices).

(1355) The units were:— Foreign and Chinese Isolation Hospitals, Indian and Chinese Police and Fire Brigade Hospitals, Venereal Disease and Tuberculosis Free Clinics, two Goal Services.

A further development was the creation of a *Medical Board* in the International Settlement which began functioning on April 1, 1931. It consists, besides the Commissioner of Public Health (Chairman) and one medical practitioner nominated by the Municipal Council, of representatives of the Shanghai Medical Society, the China and National Medical Associations, the German, Japanese and Russian Medical Societies, the Medical Practitioners' Association of Shanghai and the Society of German-speaking Physicians.

At its inaugural meeting on March 11, 1931, the Board approved of rules for the *Registration of Medical Practitioners, Dentists and Veterinary Surgeons* of all nations, which also became effective from April 1. The duties imposed upon the registered practitioners were:—

- (a) Reporting of births attended within seven days;
- (b) Certification of deaths within 24 hours;
- (c) Notification of infectious disease cases within 24 hours.

Registered practitioners were given the privilege of attending patients in all Municipal Hospitals excepting those for prisoners; the full use of the Laboratory services and a fee of one tael for each case of notifiable diseases reported by them. The figures of the first register published in 1931 and of the last available one of May 1936 are herewith compared:—

	Aug. 29, 1931	May 15, 1936
Medical practitioners	432 (236 Chinese)	1070 (729 Chinese)
Dentists	85 (36 Chinese)	172 (83 Chinese)
Veterinarians	11 (1 Chinese)	21 (4 Chinese)

A comprehensive report published by Dr. Jordan in 1935 enumerates the following divisions of the department:—

(1) Administration (including Vital Statistics, Records, Finance and Municipal Cemeteries); (2) Laboratories (Medical, Chemical and Dispensary); (3) Hospitals; (4) Veterinary (Meat supply, Dairies and Milk supply); (5) School Medical Service (including 2 trachoma clinics); (6) Markets and Bakeries (including supervision of hotels and restaurants); (7) Licensing; (8) Sanitation (General sanitation work including mosquito, fly and plague prevention, disinfection services, smoke control, offensive trades and control of Open Air Swimming Pool).

The following details are culled from this report:—

Hospital Service.—The following hospitals are available:—

	Capacity		Capacity
Isolation Hosp. f. Foreigners	130	Munic. Police Hosp.:	
Isolation Hosp. f. Chinese	150	Indians	50
Mental Hospital	20	Chinese	122
Tuberculosis Sanatorium	36	Goal Hospital	350.

In addition free clinics are held for Tuberculosis and Venereal Diseases, free smallpox vaccination and anti-cholera inoculation are offered on a large scale and a district nursing and visiting service is maintained.

Very useful work is being done by the *Veterinary Service* installed in 1931. An excellent Municipal Abattoir was opened in 1934.

A *School Medical Service* was instituted in 1934, controlling the health of 15 schools with 7,481 pupils. Intensive work is limited at present to the five primary Chinese schools with 3,170 pupils and comprises (1) Inspection and individual medical examination of pupils; (2) Follow-up work by School Nurses; (3) Compulsory exclusion of cases unfit for school; (4) School clinics; (5) Trachoma clinics.

A staff of 1,198 (904 Chinese) is employed as follows:—

Medical Officers:		Veterinary Surgeons	2 (one Chinese)
Administration	2	Analysts & Chemists	5 (2 Chinese)
Laboratories	4 (one Chinese)	Health Inspection	50
Hospitals	18 (15 Chinese)	Cadet Health Insp.	12 (all Chin.)
School Medic. Serv.	3 (2 Chinese)	Nurses & Dressers	114 (61 Chinese)
Total	27 (18 Chinese)	Miscellaneous	888 (610 Chin.)

The work of the Public Health Department of the *French Concession* under Dr. Rabaute has also been considerably enlarged. A new laboratory, costing over \$200,000 was opened in 1936 at a site adjacent to St. Mary's Hospital and is in charge of Dr. Raynal, a pupil of Calmette. It is proposed to offer the greater part of the service in the new laboratory free of charge to residents of the French Concession. Free services will be given to St. Mary's Hospital, the Isolation Hospital and the Russian Charitable Hospital(1356).

It was not until the advent of the National Government, which selected *Nanking* as the capital of China, that permanent municipal health work here became possible. The service began to function in 1928 as a division under the department of Public Safety, but was expanded in 1929 to a separate Public Health Department. The health survey of Nanking published in the same year (1205) stated that work was under the supervision of the Ministry of Health. The staff comprised a Commissioner (a graduate of the Chekiang Provincial School with postgraduate training in Germany) and three divisional chiefs (two of them medical and one a pharmaceutical graduate of the same school). Sanitary inspectors were trained. The budget of the Department was a limited one and the usual branches of the work were not yet installed.

In April 1932 the department was divided into a health division to take charge of purely administrative matters and a technical station,

(1356) This information on Shanghai has been principally collected from the following sources:— Houki Hu, *China Fed. Jl.*, 1927, p. 429; Jordan, *ibid.*, 1929, p. 338, *Chin. Med. Jl.*, 1934, p. 783 and 1935, p. 993; *Munic. Gaz.*, Aug. 29, 1931 and March 19, 1936; *Chin. Med. Jl.*, 1932 pp. 1157, 1220, 1933, p. 992; Li Ting-an, *Rep. on the Public Health Bureau of Greater Shanghai*, 1934 and *Chin. Med. Jl.*, 1935, p. 990; *Chin. Med. Jl.*, 1935, pp. 381, 1054, 1936, p. 84.

the latter being officially known as the *Nanking Municipal Health Administration*. With the help of the National Health Administration this was reorganized into four divisions, namely, control of epidemics, medical relief, maternity and child hygiene and general affairs. A considerable subsidy was granted at the same time by the National Health Administration. The budget in 1933, together with contribution from the Municipality, amounted to \$180,000 (including the surplus of \$20,000 of the Anti-opium Hospital).

From the 1933 report of the Administration by Dr. T. H. Wang it can be gathered that the staff included 24 medical men, 36 nurses, 4 pharmacists and assistants, 7 midwives, 3 technicians and 12 sanitary inspectors besides 31 auxiliary personnel.

A special feature of epidemic disease control is a *United Bureau of Summer Epidemics Prevention*, installed in 1932 with the cooperation of the National Health Administration, the Police Administration, the Medical Practitioners' Association, etc. This Bureau provides for confirmation of case reports, including the necessary laboratory examinations, isolation and treatment of cases, prophylactic inoculation, disinfection of water and education of the public. An *Isolation Hospital* with forty beds was opened in June 1932.

Free *medical service* is offered to the poor by six clinics; in addition a night clinic was established in 1933 to offer facilities to venereally infected patients. An *Anti-opium Hospital* was founded in February 1933 with 120 free beds and 30 for addicts able to pay at a rate of \$0.30 per day. The results were excellent and there were more applicants than could be accommodated.

School health work was commenced in 1930 and extended in the following year. In 1932 a special commission was created in whose work the National Health Administration and the Municipal Bureau of Social Welfare took part.

In the autumn of 1933 well trained *public health nurses* became available to replace the group of general nurses hitherto employed for this work.

The work of the administration was greatly facilitated by the completion of modern *waterworks* in January, 1934.

In 1928, a Health Department was attached to the Municipality of *Peiping*, as the former capital is called under the National Government and Dr. Tse-fang Huang (黄子方) who was then studying at the Harvard School of Hygiene, was invited to become its first commissioner. The department promulgated in November of the same year (1928) regulations for the registration of medical practitioners; up to February 1929, over 500 licenses were issued.

Unfortunately the independent health department was abolished in 1930 and turned into a division of the Department of Public Safety; after the Japanese occupation of Manchuria it was even reduced to a subdivision. However, Mayor Yuan Liang, realizing the importance of public health, restored the department to its rightful state in November 1933, with Dr. Fang I-chi as Commissioner.

As can be gathered from the 1933-34 report, the department consisted of four main divisions, namely (a) General affairs; (b) Vital statistics, communicable diseases control and inoculations; (c) Sanitation and supervision of water and food supplies; (d) Public health work including registration and control of medical workers and institutions. Important subsidiary organizations were:—

(1) The Health Demonstration Station, now called the *First Health Station*, with which we have dealt already;

(2) The *Second Health Station* established in December 1933, in cooperation with the Medical College of the National Peiping University and carrying on work similar to that of the first station in another ward of the city; Dr. C. C. Yen of the Central Field Health Station was delegated to take charge of the public health activities of the College.

(3) *Municipal hospital work*, thoroughly reorganized in 1933. In place of the four inadequate institutions previously existing, one Municipal Hospital with 50 beds and 6 dispensaries were created; the clinic for examination of prostitutes was likewise put under the control of the hospital.

(4) The *City Isolation Hospital* was similarly reorganized. This offered in addition to accommodation for 50 in-patients two out-patient clinics, one for infectious diseases and the other for general practice. A well equipped laboratory, which served at the same as *City Laboratory*, was connected with the hospital.

(5) In collaboration with the Peiping Union Medical College, the Department of Social Welfare reorganized in October 1933, the City Insane Asylum into the Peiping City *Psychopathic Hospital*. This institution which has a 200-bed capacity, was transferred soon afterwards (January 1934) to the Health Department, cooperation with the Union Medical College being continued.

(6) The activity of the *Child Health Institute* will be considered when dealing with the problem of midwifery and child health work (1357).

(1357) Nat. Med. Jl., 1928, p. 333, 1929, p. 76; 1930 Directory of the Nat. Med. Assoc., Peiping, p. 7; 1933-34 Annual Rep. of the Dept. of Publ. Hlth., Peiping Municipality; 1934 Rep. of the Central Field Health Station, p. 67.

In the preceding chapter mention has been made of the institution of a public health campaign in important cities of South China, including *Amoy*. There in 1927 a small group of citizens under Mr. C. J. Wong, General Secretary of the Y.M.C.A., formed a committee and formulated plans for cleaning up the city. These schemes were realized early in 1928 in cooperation with the Council on Health Education and, with the aid of 15 local organizations besides the Y.M.C.A., an anti-plague campaign was conducted. One of the means used to attract the attention of the public to the necessity of cleaning up the city and freeing it from rats was an exhibition in the Y.M.C.A. visited by over 40,000 persons, about half of whom assisted at the lectures and demonstration of films given twice daily.

Another outstanding event for the city of Amoy was the opening of a model system of *waterworks* in 1928. This owed its existence principally to the initiative of a young engineer, Mr. Homer C. Ling, who had returned to Amoy after graduation in America in 1921. He was instrumental in enlisting the interest of a number of leading business men, especially Messrs. Oei I-tjoe and Wong Se-kim, with whose aid a company was formed. The reservoir of the water system was located in the hills five miles away and quite free from danger of pollution. Excellent filterbeds and an ozonating plant were provided, there being sufficient water in reserve to face a drought of 18 months (1358).

In addition to the activities carried on in populous centres, more and more attention is paid to *rural public health work*. The importance and magnitude of this becomes clear if it is realized that over 85 per cent of the Chinese population are rural (1359).

Mention has been made already of the work at Woosung, Kaochiao and Kiangwan, localities of a rural character though situated within the precincts of Greater Shanghai. To this the activities started in 1935 under the auspices of the Association for the Improvement of Rural Districts of Shanghai in four villages has to be added (1360). Rural public health work was gradually started in other provinces as well and in autumn 1932 a *Rural Health Service* was inaugurated under the Department of Medical Relief and Social Medicine of the Central Field Health Station. The main functions of this were:—

- (1) To attain a feasible health program through practical research in a restricted area (Tangshan, see below);
- (2) To promote work elsewhere through propaganda and demonstration (1359).

A survey of rural public health activities by Li Ting-an in 1934 (1361) enumerated besides the stations then existing in the Greater

(1358) Miller & Kim, "Amoy Seeks Health", *China Fed. J.*, 1928, p. 581.

(1359) J. Heng Liu, *China Med. J.*, 1934, p. 73.

(1360) *Chin. Med. J.*, 1936, p. 637.

(1361) *Ibid.*, 1934, p. 1086.

Shanghai area the following 14 centres:—

<i>Year of establ.:</i>	<i>Locality:</i>	<i>Province or city:</i>	<i>Organi- zed by:</i>	<i>Staff:</i>	<i>Budget:</i>
1929	Tinghsien	Hopei	(3)	3	\$ 4,540 (1362)
1931	Wanping	"	(4)	50	35,500
	Tangshan	Kiangsu	(1)	¾	1,200
1932	Hsishan	Peiping	(4)	¾	2,200
	Lungshan	Shantung	(4)	6	2,400
	Taihsien	Kiangsu	(8)	4	4,452
	Wukang	Chekiang	(2)	7	6,369
	Canton	Kwangtung	(4)	13	7,824
1933	Hohsien	Anhwei	(4)	10	4,080
	Hsiachsien	Kiangsu	(3)	6	5,200
	Yencheng	"	(3)	6	4,800
	Kiangnin-chen	"	(3)	6	4,800
	Wuhsing	Chekiang	(3)	6	5,800
1934	Chuyung	Kiangsu	(3)	9½	8,550

(1) Nat. Health Admin. (3) Hsien or City Govt. with other support
(2) Hsien or City Govt. (4) Private Organization.

The total number of rural health workers in these 14 centres was 128; there were 25 physicians, 31 nurses, 12 midwives, 7 pharmacists, 2 sanitary inspectors. Since most stations had a limited staff and budget, the work had to be carried out on a modest scale. As summarized by Dr. Li Ting-an:

all of them undertook curative work; next to curative work in importance was the control of communicable diseases, which has frequently been the cause for the establishment of the centre. The less frequent activities were public health publicity, school health, maternity and child health, sanitation and treatment of opium addicts. Industrial health and vital statistics were very minor activities in all of the centres. Training of public health personnel was carried out in five.

We may now proceed with a discussion of certain branches of public health work which received particular attention. That measures to promote *maternity and infant welfare* rank first among these is not surprising in view of the excessive maternal and infant mortalities. Huang and Wang (1363) stated in this connection that on account of the absence of accurate Chinese vital statistics one is forced to use the rough estimate of an infant mortality of 200 and a maternal morality of 15. If these rates are taken for a comparison between China and countries with the lowest mortalities, one finds that China has in a year an excess of 2,612,925 infant deaths and an excess of 190,575 maternal deaths, assuming a birth rate of 35 and a population of 450 millions. It was clear that ignorance and poverty of the people, leading to the utilization of unskilled old-type midwives, were the chief cause of this excess mortality.

(1362) A description of the work at Tinghsien has been given by C. C. Ch'en, Chin. Med. Jl., 1933, p. 611.

(1363) Chin. Med. Jl., 1936, p. 554.

The history of the splendid efforts to remedy this deplorable state of affairs goes back to the 1928 Conference of the National Medical Association, when Dr. Marion Yang, Instructor in Hygiene and Public Health at the Union Medical College, read a paper on Midwifery Training in China(1364) where she proposed that three different courses should be given simultaneously:—

(a) One of two months duration to teach *old-type midwives* the principles of asepsis, method of conducting normal labour, and recognition of abnormalities;

(b) A *regular two year course* (one year for trained nurses) to qualify students with high school education as well-trained midwives not only able to handle abnormal cases in times of need, but to become supervisors, teachers and organizers of

(c) "*Quantity*" *short courses* of six months' duration to replace the old-style midwives as quickly as possible with modern-trained ones.

When the Municipal Health Department was established in August, 1928, the Commissioner realized the necessity for midwifery training and in September organized a special *Midwifery Commission*. The principal steps undertaken by it were:—

1. To begin with the training of old-style midwives as outlined above, the first course starting on November 5, 1928;
2. To recommend to the Ministry of Health on November 7, 1928, to take over the central administration of the work, and the First National Midwifery School of Peiping as a demonstration.

Thanks to the efforts of Dr. J. Heng Liu, then Vice-Minister of Health, prompt action was taken and the *National Midwifery Board* was organized with the co-operation of the Ministry of Education on January 8, 1929. The principal regulations of this were(1365):—

Article I. This Board aims at the promotion of midwifery education and at the advancement of the standard of midwives.

Article II. There shall be temporarily seven to nine members, to be composed of the following:

- a. Two representatives each from the Ministries of Education and of Health;
- b. Three to five members jointly appointed by the two Ministries, who are interested or who have had special training in midwifery education.

Article IV. The members to serve in an honorary capacity for a term of two years, which may be prolonged.

Article V. Regular six-monthly and—if necessary—special meetings to be held.

Article VI. The duties of the Board shall be:

- a. To plan for a demonstration midwifery school;
- b. To manage and hold in custody funds on midwifery training;
- c. To determine the standard of midwifery education;
- d. To investigate public and private midwifery schools.

The *First National Midwifery School*, towards the expenses of which the Executive Yuan gave an annual grant of \$30,000 was opened

(1364) Published China Med. Jl., 1928, p. 768.

(1365) Nat. Med. Jl., 1929, p. 75.

at Peiping on November 1, 1929, and was connected with a maternity home of originally 12 beds. Dr. Yang, who had had a long training in obstetrics and had made a special study of midwifery education and administration in Europe, was appointed Director, Miss Tseng Hsien-chang (曾憲章), a graduate nurse who had received her midwifery training in England, Dean.

Miss Tseng reported in 1930 (1366) that the school had an attendance of ten pupils in the two-year course and the same number in the six months' course. Enlarged quarters were arranged for 1931 permitting of a marked expansion of the work.

At the same time, Marion Yang reported remarkable progress in the training of old-style midwives. All the 163 registered old-type midwives had been trained and 112 had passed examination. The successful candidates had been given baskets containing a proper outfit for their work and were allowed to continue their profession. It was found wise to utilize them as a means of publicity, as their talk and demonstrations were apt to influence the masses. Dr. Yang added that out of a total of 220 practising midwives (both old-style and modern trained), 193 were registered, thus giving Peiping 87 per cent completeness (1367).

The Programme adopted by the Division of Maternity and Child Health of the Health Ministry, as published in 1930 (1368) is as follows:—

- Objects:* I. Training of 100,000 midwives in 50 years;
 II. Adequate Supervision and Control of Midwives;
 III. Establishment of nation-wide maternity and child health facilities;
 IV. Investigation into problems of Maternity and Child Health.
- First Five Year Program (1929-1933):*
- Survey* I. Survey, classification and registration of existing private and government institutions (1930).
- Training* II. Establishment of five regional (National or Normal) Schools at Peiping, Nanking, Hangchow, Canton, Hankow (1932).
 III. Establishment of one provincial school in each province (1933).
 IV. Sufficient strengthening facilities of the First National School to obviate necessity of sending individuals abroad who are to staff the Normal Schools.
 N.B.—National Schools to have two-year course, provincial schools six months course.
- V. *Administration*—through medical inspectors supervising:
 1. Midwifery training—private and governmental;
 2. Control of practice of midwifery by local health administrations;
 3. Grants-in-aid to:
 (a) Midwifery training;
 (b) Establishment of child health activities by local authorities.
- VI. Investigation of Medical Problems of Maternity and Child Health.

(1366) China Med. J., 1930, p. 434.

(1367) Ibidem, p. 428.—Further information on the Curriculum of the School and that adopted for old-style midwives, etc., will be found in the appendix to the two articles, *ibidem*, pp. 438-445.

(1368) Ibidem, p. 435.

Dr. J. Heng Liu, dealing with the problem of maternity and infant welfare in 1934(1369) stated that four different courses have been offered by the school:

- (a) Two-year course for the training of "quality-type" midwives for both urban and rural maternity and infant welfare services. Graduates from senior high schools and those with equal standing are qualified for admission.
- (b) Six-month course for the supplementary training of new graduates from the provincial midwifery schools;
- (c) Six-month course for graduate nurses for rural health work;
- (d) A regular six-month course for the production of "quantity-type" midwives to meet the immediate demands.

At the same time 79 students were reported to have graduated.

To enlarge the scope of the work a *Child Health Station* was founded in 1929 by the Peiping Municipality in which the School co-operated. It was in 1934 entrusted with the following responsibilities (1369):

- (a) Mothercraft—a training course for mothers on home economics, home hygiene, and care of the newborn and infant;
- (b) Statistics of births and deaths;
- (c) Investigation of medical problems, such as the nutrition of the infant and pre-school child, infant mortality and its causes, and the promotion of mothers' health by regulating the number of children;
- (d) Publicity work for parents;
- (e) Health consultation—for mothers and children under five years;
- (f) Registration and supervision of midwives.

There were registered at Peiping 286 old-type midwives and 50 modern ones(1370).

Yung (1370), in a survey of child health work in the Peiping First Health Area during the years 1925-1935, stated that ever since establishment of the work maternity and child health formed an important part of the program. Three types of service were rendered, namely clinic service (antenatal, postnatal and for children), delivery service (normal cases being delivered at home, abnormal ones being referred to hospitals) and home visits by trained workers.

A *Peiping Committee on Maternal Health*, concerned with the problem of birth control, was founded in February 1930(1371).

The *Central Midwifery School* at Nanking was opened in September 1933 in connection with the Central Hospital and in cooperation with the maternity division of the Nanking Municipal Health Station (1369).

From a survey of Maternity and Child Health Work in Nanking by Huang and Wang(1363) it can be gathered that the school had 24 maternity beds. It gave at first a two-year course for training of

(1369) Chin. Med. Jl., 1934, p. 70.

(1370) Ibid., 1936, p. 562.

(1371) Marion Yang, "Birth Control in Peiping," Chin. Med. Jl., 1934, p. 786.

senior middle school graduates as midwives, twelve of whom passed up to July 1935. From that time onwards the standards were raised and the period of training prolonged to three years; 57 pupils underwent instruction.

Besides this course the following were offered at Nanking:—

1. Under the auspices of the National Health Administration, six-months courses on Public Health to graduate physicians and nurses to prepare them for public health work including maternity and child health.
2. Under the auspices of the Municipal Health Administration a 2-3 months refresher course to post-graduate midwives, 184 of whom satisfactorily completed such instruction up to the end of 1934.
3. A two-year course under the supervision of the Municipal Health Administration in the Foundlings' Home for the training of high grade nurses. It was expected that the first class of about 48 students would graduate in summer of 1936.

Huang and Wang stated further that maternity and child health services had been instituted in all six urban and in 7 of the 10 suburban health centres instituted between the years 1930-35 by the Municipal Public Health Administration, where activities similar to those in Peiping were carried out. A Day Nursery for the children of working mothers was founded by private enterprise in May 1935.

From the 1934 survey of Dr. J. Heng Liu and other sources (1372) the following data may be culled regarding the various provinces:—

Kiangsu.—The Maternity and Child Health Service in Nanking is connected with the Central Midwifery School and cooperates with the Municipal Health Service and the Central Hospital. It has been developed until it now reaches about 25 per cent of the total population. In Shanghai, the Bureau of Public Health of the City Government opened a Maternity and Child Health Centre at Chapel. The Provincial Midwifery School in Chinkiang takes charge of the maternity and child health progress in the whole province. Six new rural maternity homes were opened during the year, in addition to the six previously established. Rural maternity and child health service was also instituted in Kiangninghsien.

Chekiang.—In preparation for the development of various rural maternity homes in Chekiang Province, the Provincial Midwifery School sent five of its graduates to the First National Midwifery School for a six-month supplementary training.

Anhui.—A definite step toward the development of maternity and child health in the province was taken when the Anhwei Provincial Government provided funds to enable twenty students to study midwifery. Ten of these have already begun their work at the Central Midwifery School.

Kiangsi.—The former Provincial Midwifery School in Kiangsi, established in 1929, was reorganized and its staff considerably strengthened during the year 1934. Maternity and child health work was started in four of the ten rural welfare centres under the Nanchang Office of the National Economic Council.

Kansu.—A new provincial midwifery school was built at Lanchow by the National Economic Council which admitted its first regular class in March, 1935. Attention is also given to the control of old-style midwives

(1372) J. Heng Liu, *Chin. Year Book* 1935-36, p. 1625; *Chin. Med. J.*, 1935, pp. 703, 803, 1936, pp. 86, 87.

and about forty of them have already undergone additional training. Good progress is also made with prenatal and postnatal clinics.

Shensi.—The provincial midwifery school at Sian was established in 1935 through reorganization of the private Hsiching Midwifery School, made possible through a grant of land by the Provincial Government and monetary grants from the National Economic Council. Attached to the school there is a maternity home of 40 beds. A general maternity and child health program is also being carried out in Sian. Three rural maternity and child health centres have been started.

Shantung.—The urban centre in Tsinan and the rural centre at Lungshan continue to develop under the guidance of the Cheloo University School of Medicine.

Hopei.—The personnel training and midwifery work of the First National Midwifery School have been continued. The Peiping Child Health Institute has been strengthened both financially and technically. Two new centres were organized, in addition to the former five. In Tsingho, the work of the rural maternity and child health service reached twice as many people during the past year as in previous years.

Hunan.—A provincial maternity service was started in September 1934, consisting of a staff of midwives headed by the chief of the obstetrical service of the Hsiang-Ya Hospital. Antenatal, postnatal and baby clinics are held, the paediatrician of the Hsiang-Ya Hospital taking part in the work. Normal delivery cases are attended in their homes, difficult ones in the hospital. Plans for extension of work are under contemplation.

Fukien.—A provincial midwifery school was opened at Foochow towards the close of the year 1935 with the aid of the Central Field Health Station. A maternity home with twenty beds was attached to the school and eighty students enrolled.

Yunnan.—A midwifery school is attached to the Kunming Municipal Hospital. Plans for a proper provincial department for mother and child welfare including midwifery training are under contemplation.

Mention should be made of the work of the *National Child Welfare Association of China*, organized in April 1928 by Dr. H. H. Kung, Vice-President of the Executive Yuan and concurrently Minister of Finance, and other leaders at Shanghai. The program of this association comprises (1) Child Protection, safeguarding the legal rights of children; (2) Child Relief, taking care of children under the sway of famine, flood, war or other misfortunes; (3) Child Health, including the promotion of childhood and parenthood education. The following five welfare centres for children are maintained by the Association at Shanghai: (a) A Welfare Home receiving orphans and other homeless children and placing them in childless families; (b) A Child Welfare Nursery, admitting children from 2-6 years whose mothers are at work in factories; (c) A Child Welfare Clinic to demonstrate preventive health work in addition to curative work; (d) The Chapei Benevolent Home to receive destitute children from 12 to 18 years of age and train them as artisans; (e) A Child Welfare Sanitarium to receive children suffering from tuberculosis. This sanitarium, in joint operation with the Ching Chong Memorial Hospital in Kiangwan, was newly built to form a memorial for Mrs. Rhoda Cunningham, wife of the former U.S. Consul General at Shanghai, Mr. E. S. Cunningham.

A *National Conference* of child welfare leaders was held under the patronage of the Association at Shanghai in 1934 (1373).

School Health.—Though repeated reference has been made to school health work under local auspices, this must be supplemented by describing some recent activities of the Department of Health Education and Propaganda, Central Field Health Station. As can be gathered from the 1934 report of the Station a *National Planning Commission on School Health Education* was organized by the department in cooperation with the National Health Administration and the Ministry of Education. This commission was entrusted with the task of:

- (1) Setting up a standard budget for local school health work;
- (2) Setting up a standard of health teaching facilities in primary schools;
- (3) Studying the standing and sitting heights of primary school students as a basis for a standard of seating as well as reading accommodations in primary schools.

At its first meeting in December 1934, the Commission accepted a *National School Health Program for Urban Primary Schools* which had been approved by a committee of experts at the conference of public health workers convoked by the National Health Administration in April 1934. Extension work, planned and supervised by the department, led to the development of systematic school health work in 1934 at Nanchang (Kiangsi), Foochow (Fukien), Kaifeng (Honan), Sian (Shensi) and Lanchow (Kansu).

Industrial Health.—Systematic health supervision of factories was carried out in Peiping since 1925. In November 1929, a joint *Commission on Industrial Health* was organised by the Ministries of Health and of Labour and Commerce. The industrial centre Wusih with two hundred factories and 120,000 labourers was selected as demonstration area. An industrial health station with four free dispensaries was instituted, stress being laid upon preventive as well as upon curative aspects. To continue this work, in 1931 a local commission on labour welfare was created which is in direct control of the four clinics.

Further progress in industrial health work became possible through the institution of a Central Factory Inspection Bureau under the Ministry of Industries. Under the cooperation of the National Health Administration a *Division of Industrial Hygiene* was created in August 1933, which made detailed plans for starting industrial hygiene work in Shanghai, Tsingtao, Tientsin and Hankow, and assisted in the organisation of local committees of Industrial Hygiene and Safety. Pamphlets and posters were distributed and surveys conducted in several industrial centres. It was found that 69.6 per cent of the factories were equipped with medical facilities, 13 per cent had made arrangements with neighbouring hospitals where they could

send their workers in case of sickness or accident, whilst 17.4 per cent had no facilities at all (1374).

Anti-Tuberculosis Work.—It is not surprising to find that anti-tuberculosis work developed most successfully at Peiping on account of the dry climate and brilliant sunshine prevailing during the greater part of the year. In an earlier chapter reference has been made to the foundation more than 25 years ago of a sanatorium in the Western Hills under the Methodist Mission which was founded and directed for many years by Dr. N. S. Hopkins. In 1923 the Peiping Union Medical College took over the professional responsibility. As can be gathered from a report on tuberculosis work at Peiping by Dr. Van Allen (1375) the *Hopkins Sanatorium*, as it is now called in honour of its founder, is composed of small pavilions, offering accommodation for three classes of male patients. The original capacity of 6 beds gradually rose to 73 in 1934.

It has also been mentioned that the work of the Chinese Red Cross Society at Peiping included the care of tuberculous patients. According to Dr. Van Allen's description the capacity of this beautifully situated hospital was increased in 1934 to 57 beds, accommodation being offered to three classes of patients of both sexes.

Further establishments were (a) The Pa Ta Chu Sanatorium built in 1929 in the Western Hills with a capacity, in 1934, of 40 beds; (b) The Folks Sanatorium, also in the Western Hills, able to accommodate about 30 third-class patients; (c) The Chung Hua Hospital, a former Manchu residence in the city converted in 1933 to hold 16 patients of both sexes in three classes; (d) The Chung Hua Branch Hospital, a similarly arranged city hospital for 36 patients of both sexes to which a training school for practical nurses is attached; (e) The Central Hospital, which set aside in 1932 one third class ward for 25 male tuberculous patients; (f) The Hsiang Shan Sanatorium, in the imperial hunting park of the Western Hills, opened in autumn 1933 as a tuberculosis sanatorium for women with 20 beds but now possessing also 8 third-class beds for men. A nursing class is attached to this institution which is periodically visited by members of the tuberculosis service of the Union Medical College. All these sanatoria are connected with dispensaries to select suitable patients for stationary treatment (1376).

To provide for close cooperation of tuberculosis workers the *Peiping Tuberculosis Club* was founded in September 1933 (1377). Dr.

(1374) J. Heng Liu, *Chin. Med. Jl.*, 1932, p. 828 and *Chin. Year Book* 1935-36, p. 1626.

(1375) *Chin. Med. Jl.*, 1934, p. 792.

(1376) A report in the *Chinese Medical Journal* (1931, p. 278) mentions also the Peiping Tuberculosis Home established 14 years ago and the Conquest Hills Sanatorium, opened in July 1934.

(1377) *Chin. Med. Jl.*, 1934, p. 799.

Van Allen, summarizing its first annual report (1375), pointed out that in spite of increased sanatorium facilities the tuberculosis situation in Peiping was far from satisfactory. Not only was the number of beds available far below the number of 3,000 considered necessary but most of the existing beds were for paying patients, so that large numbers of poor patients applying at the dispensaries could not be admitted. A further drawback was that in most of the institutions no X-ray facilities were available making pneumothorax treatment difficult, if not impossible. It was planned to establish a proper tuberculosis centre to supplement the work of the existing institutions. The Peiping Municipality gave for this purpose a beautiful site within view of the Forbidden City and Coal Hill.

In the course of a discussion of the tuberculosis problem in the Shanghai Public Health Club early in 1933, the formation of a *National Anti-Tuberculosis Association* was suggested. A preparatory committee consisting of Drs. Wu Lien-teh, Bume and Li Ting-an was elected and the program drawn up by them was discussed by other members of the club. Mayor Wu Te-chen of Greater Shanghai was approached to take the lead and under his chairmanship a meeting was held on October 21, 1933, at which the Association was inaugurated. An Administrative Board of 55 members with Dr. W. S. New as chairman, a Standing Committee and a Supervisory Committee of 11 members each were elected (1388).

A *National Anti-Tuberculosis Conference* was held in October 1933 at Shanghai under the auspices of the Chinese Medical Association with Dr. Wu Lien-teh as chairman, at which a number of important papers were read. Drs. W. S. New and Li Ting-an, addressing the Conference, emphasized the seriousness of the tuberculosis problem in China, the latter pointing out that the estimated tuberculosis death rate in China is about 300 per 100,000 population so that the number of deaths due to the scourge was presumably 1,200,000 per year. The delegates visited the Tuberculosis Division of the Chinese Red Cross Hospital as well as the *Ching Chong Sanatorium* at Kiangwan situated in extensive and beautiful grounds which had recently been put at the disposal of the Red Cross Hospital through the generosity of a wealthy Chinese family (1389).

As in the case of tuberculosis strenuous efforts were made to consolidate *leprosy work*. The first *National Leprosy Conference* was held in October 1932 under the chairmanship of Dr. Wu Lien-teh. A number of foreign delegates assisted, including Mr. W. H. P.

(1388) For the Regulations of the Association see Chin. Med. Jl., 1934, p. 320.

(1389) Li Ting-an, Chin. Med. Jl., 1934, p. 301; *ibid.*, p. 318.

Anderson, general secretary of the Mission to Lepers, London, Mr. H. N. Konkle, secretary of the Mission to Lepers, Canada, Dr. H. W. Wade, medical director of the Leonard Wood Memorial Fund for the Eradication of Leprosy, Dr. C. M. Hasselmann, Manila and Dr. A. Oltmans, general secretary of the American Mission to Lepers for Japan. In addition to meetings devoted to the reading and discussion of papers and reports upon the different aspects of the leprosy problem a round-table conference was held. Resolutions were adopted urging the introduction of modern and humane laws for the supervision and treatment of lepers and petitioning the Government to take the initiative in the work against leprosy and encouraging in the meanwhile the Chinese Mission to Lepers and other organized bodies to continue their activities(1390).

Important new institutions for the treatment of lepers were (a) A Leper Colony at *Kiulunkiang* under Dr. Curtis M. Galt of the American Presbyterian Mission, established in February 1928, on the site of an abandoned village given by the magistrate(1391); (b) A Village Clinic at Iam Tsau (Swatow district) run by the Swatow Mission Hospital(1392); (c) A *National Leprosarium at Shanghai*, formally opened on December 14, 1935, to administer to the welfare of the Shanghai leper population, estimated to be not less than 2,000, with Dr. Daniel G. Lai, Professor of Public Health at the National Medical College of Shanghai as Superintendent and Dr. F. Reiss as chief of the clinical department(1393).

A comprehensive survey on *Leprosaria and Organized Leprosy Clinics* in China made by Dr. J. L. Maxwell in 1935(1394) may thus be summarized:—

LEPROSARIA

Province	Locality Remarks	foundation	Year of
Kwangtung	Pakhoi	1887	Founded by Church Missionary Society and accommodating 100 lepers.
	Sheklung	1907	Organised and run by Catholic Sisters of Immaculate Conception. About 800 inmates.
	Tungkun	1905	Organised and run by Rhenish Mission. About 200 inmates.
	Taikam	1924(?)	Founded by Rev. John Lake. About 200 inmates.

(1390) See *Leprosy* No. of the Chin. Med. Jl., March 1933 (p. 223 & foll.).

(1391) Galt, *China Med. Jl.*, 1930, p. 876 and *Chin. Med. Jl.*, 1933, p. 284; *ibid.*, p. 300.

(1392) Fraser, *Chin. Med. Jl.*, 1936, p. 693.

(1393) *Chin. Med. Jl.*, 1935, p. 1269, 1936, p. 186.

(1394) *Ibid.*, 1935, p. 957.

<i>Province</i>	<i>Locality</i>	<i>foundation</i>	<i>Remarks</i>	<i>Year of</i>
	Swatow	?	Colony on an island for about 100 inmates to replace the work establ. by Dr. Gauld in Swatow in 1867 and continued on an island until destruction through a typhoon in 1921.	
	Yeung Kong	?	Work carried on for many years by the American Presbyterian Hospital in a leper village.	
	Hoihow	?	Leper settlement financed by local group with help of Chin. Mission to Lepers, medical attendance being in hands of the American Presbyterian Hospital.	
	Sun-Wui	?	Catholic leper colony with accommodation for over 100 inmates.	
	Ching Yuen	?	Work among boat population organized by the Boat Mission with medical assistance from the Kongchuen Miss. Hospital.	
Yunnan	Yunnanfu	?	Leper home under auspices of local authorities with medical assistance of the missions.	
	Chaotong	?	Financed by International Mission to Lepers and organized by English Methodist Mission. About 100 inmates.	
	Kiulungkiang	1928	Settlement for almost 100 lepers attended by the staff of the American Presbyterian Mission Hospital.	
Fukien	Yenping	?	Home for 50 lepers under American Methodist Mission.	
Chekiang	Hangchow	1887	Founded by Dr. Duncan Main and financed by International Mission to Lepers. 105 inmates.	
Kiangsu	Shanghai	1935	National Leprosarium proposed to accommodate in the first place 100 lepers.	
Shantung	Tsinan	1926	Hospital for early cases with accommodation for 50 patients under School of Medicine of Cheloo University.	
	Tenghsien	1919	Leper settlement for 250 inmates financed by International Mission to Lepers.	
	Tsingchowfu	?	New work organized by local gentry with the aid of the English Baptist Mission Hospital.	
Hupei	Siaokan	1894	Home for 130 lepers financed by International Mission to Lepers.	
Hunan	Sinhwa	?	Opened recently by Chinese Mission to Lepers in association with Norwegian Mission Hospital. For 50 inmates.	

<i>Province</i>	<i>Locality Remarks</i>	<i>foundation</i>	<i>Year of</i>
Kiangsi	Nanchang	?	Leprosarium for 100 inmates supported by Chinese Mission to Lepers with local committee of gentry. Medical supervision by American Methodist Mission Hospital.
Szechwan	Moshi	?	Small home among Nosu tribes run by Catholic Mission.
Kansu	Kaolan	?	Leper settlement for 50 inmates in charge of China Inland Mission, financed by International Mission to Lepers.

N.B. Schemes not yet matured are not included in this table.

Clinics

<i>Locality</i>	<i>Remarks</i>
Iam Tsau	See text.
Weih sien (Shantung)	Four village clinics held in connection with the American Presbyterian Mission Hospital.
Shanghai Hongkew Clinic	Under Chinese Mission to Lepers.
Swatow	Connected with Swatow Hospital of the English Presbyterian Church. Clinics are also held at Chaoyang and Kityang.
Jukao (Kiangsu)	In connection with Christian Reformed Church Hospital.

In addition to the three last mentioned city clinics lepers are attended as out-patients in Mission hospitals all over the leprosy area (1895). Dr. Maxwell emphasizes, however, the limited value of the city clinics to which patients may have to come regularly for prolonged periods from the distance. The leprosaria on the other hand provide for an infinitesimal fraction of the lepers only, however excellent and promising the work of some of them, directing their attention upon early cases, proves to be. It is clear therefore that main stress ought to be laid upon village clinics. Particularly apt as these are to reach early cases, they ought to obviate the need for indefinite multiplication of settlements.

Birth Control Movement.—Though Mrs. Margaret Sanger had visited China in 1923, it was not until February 1930 that the first birth control clinic was opened at *Peiping* under the auspices of the Peiping Committee on Maternal Health. This committee was under the leadership of Mr. Maxwell Stewart of the Department of Sociology and Social Work, Yenching University, with the support of Dr. Marion Yang and other medical and social workers.

(1895) According to Cadbury and Jones (p. 257) presumably the first organized leprosy clinic in China was that opened in 1916 at the Canton Missionary Hospital.

The first birth control clinic in *Shanghai* was opened in 1935 with Mrs. Anna Chow as Secretary. The clinic is now conducted in connection with the First Red Cross Hospital, where the visiting gynaecologist Dr. Amos Wong, used to devote some time to the work.

Cremation.—The need for cremation in China was stressed by Dr. Wu Lien-teh in a lecture before the Shanghai Rotary Club on June 18, 1936. He pointed out that under the leadership of the Mayor of Greater Shanghai (General Wu Te-chen) plans for the construction of an up-to-date crematorium in Kiangwan had been mooted in April 1935, and that a committee had been formed to promote this scheme.

A *Chinese Cremation Society* was founded in June 1936; its principal objects are:—

1. To promote a sanitary, economical and aesthetic method of disposal of the dead.
2. To help the Government and people of China in utilizing fertile land now wasted upon burial grounds for the cultivation of useful crops. In this way farmers will derive more income from their land, and the Government more taxes.
3. To co-operate with Government and municipal authorities in establishing and maintaining crematoria amid suitable artistic surroundings for the disposal of the dead.
4. To infuse more knowledge regarding the benefits of cremation among the people of China.
5. To develop friendly intercourse with similar organisations throughout the world.

Donations amounting to \$40,000 had been obtained, and a lot of land measuring 20 mou had been given by the City Municipality for the purpose. It is said that one-eleventh of the arable land of China is at present occupied by graveyards, and that the demands of the living to have sufficient farm land for growing crops should outweigh the present wasteful needs of the dead.

In June 1934, the Central Field Health Station established a *Kala-azar Research Station* at Tsingkiangpu (Kiangsu) to study methods of control and investigation. 24.6 per cent of the inhabitants of ten carefully investigated villages were found infected. In the clinic attached to the station 201 in-patients and 691 out-patients were treated up to the end of 1934.

Helminthic diseases were studied jointly by the Chekiang Provincial Government and the Central Field Health Station. An Anti-Schistosomiasis unit was stationed at Chühsien. Early in March 1934, the Hangchow Field Unit was established; it consisted of three substations for the study and prevention of Schistosomiasis, Fasciolopsiasis and Paragonimiasis (1396).

Progress in *Animal Husbandry* has been made in Kiangsu, Ninghsia, Kwangtung and Kwangsi. In the capital, an up-to-date Veterinary Laboratory is being built, while in Nanning (capital of Kwangsi) a fine Bureau was established in 1934 with a budget of \$250,000 per annum. Dr. E. A. Rodier (formerly of the Philippine Government) is attached to this institution, and thousands of farmers have received instruction in protecting their livestock from the ravages of disease.

The *Army Medical Services* were also thoroughly reorganised. During the civil war General Chiang Kai-shek, Commander-in-Chief of the Nationalist forces asked for the services of Dr. New Way Sung, Field Director of the Red Cross, with whose help a series of efficient military hospitals along the route traversed by the Nationalist Army was installed for the wounded.

In 1929 a permanent Army Medical Service was created with headquarters at Nanking under the Ministry of Military and Naval Affairs. Dr. Wu Lien-teh was appointed first Surgeon-General and Chief of the department, but owing to other pressing duties was not able to accept the honour. So the former Doctor-in-Charge Hou Tzu-hua (郝子華) was retained, while Dr. J. Heng Liu—owing to his vast surgical experience—was appointed by General Chiang Kai-shek to superintend the special medical department of the Generalissimo's headquarters. There are now over 400 medical officers attached to the central field force. A modern naval hospital at Kiangnan (Shanghai) fitted with all requirements for 102 patients and costing \$180,000 was completed in 1931. Greatest attention is paid to sanitation for which work now specially trained inspectors are available. The sixteen military hospitals in Kiangsi for instance took recently a meritorious part in a general sanitation campaign in the province.

Excellent progress was made in developing the Health Service of the Nanking-Shanghai and Shanghai-Hangchow-Ningpo Railways under the able leadership of Dr. Tsefang F. Huang, appointed chief medical officer of the system in 1933. According to a report rendered by him in 1935 the staff comprises now 26 doctors, 37 nurses (including 5 specially trained in public health), 3 pharmacists and 10 sanitary inspectors besides auxiliary personnel. The formerly existing Chinkiang hospital was thoroughly remodelled; moreover a central hospital with specialist services was opened in Shanghai and a third hospital established in 1934 at Hangchow. In addition to curative services greatest stress is laid upon disease prevention and health education.

A few words may be conveniently added in regard to the *Postal Medical Service*. Up to the year 1911 the Chinese Postal Service (de-

finitely established in 1896) was an adjunct to the Maritime Customs and consequently the employees were looked after by the Customs Medical Officers. When in 1911 the G.P.O. was separated from the Customs, the former made its own arrangements for providing medical attention to its staff. These usually comprised medical care for the families of the foreign employees while those of the Chinese staff were excluded. When the G.P.O. Service was reorganised in 1929, a new ruling was adopted, whereby the families of all employees received the benefit of modern medical treatment; also those drawing a salary of less than \$130 per mensem were accorded free medicines. While in general the various postal administrations continued to employ medical practitioners or hospitals under contract, since November 1929, medical attendance was provided at Shanghai in the Post Office building by a medical officer engaged at a salary of \$100 per month (1397).

Most praiseworthy was the medical work carried on during the recent national disasters such as the 1931 flood in Central China and the Japanese invasion of the Shanghai area.

As can be gathered from the official report of the National Flood Relief Commission for the period August 1931 to June 1932 (1398), excellent work was done by the department of Hygiene and Sanitation under the control of Dr. J. Heng Liu. Field units were established in the affected districts, adapted to their needs and making use of local facilities. In the Wuhan area for instance, where the risk of epidemics was particularly great on account of the large refugee camps, the Field Health Unit consisted of 8 hospitals, 12 clinics, 8 travelling clinics, 1 smallpox isolation hospital, 2 inoculation teams, 3 sanitary teams and a temporary quarantine service. Such was also established at Nanking which had also to provide a measles isolation hospital. Much assistance came not only from local institutions but also from those outside the areas affected, so that an ample staff, comprising 130 doctors, 86 sanitary inspectors and 170 nurses and dressers besides auxiliary personnel was available. Thus, though the toll from epidemics including cholera was heavy, infection remained limited and many lives were saved.

In 1932 the work of the Department was reorganized on account of the return of the refugees to their homes and the reconstruction work. 17 travelling clinics were instituted for this purpose.

A special feature of the work at Hankow was a hospital ship equipped mainly by the foreign community of Shanghai and staffed

(1397) Nat. Med. Jl., 1928, pp. 257-258, 1931, pp. 376, 383, 676; T. F. Huang, Chin. Med. Jl., 1935, p. 973; J. Heng Liu, Chin. Year Book 1935-36, p. 1624.

(1398) Chin. Med. Jl., 1933, p. 75.

by members of the Henry Lester Institute of Medical Research which rendered valuable help, establishing shore units besides carrying on medical and laboratory work aboard(1399).

The war work in Shanghai in 1932 was particularly difficult, not only because thousands of refugees had to be taken care of in addition to numerous wounded but also because some of the medical institutions were either destroyed or had to be temporarily evacuated. However, Chinese and foreign medical officers and practitioners competed in volunteering their services. Numerous temporary hospitals were established and well organized services for the refugee camps were instituted.

Following the 1933 Yellow River flood, which covered parts of Hopei, Shantung and Honan provinces, a health service was organized under the Yellow River Flood Relief Commission with Dr. J. Heng Liu as chief. The main office was in Nanking; two branch offices were established in the field at Tsinan and Kaifeng. Eleven field units with 43 clinics were organized(1400).

As in the previous chapters we may now continue with a discussion of the activities of *medical societies*.

The 7th Biennial Conference of the *National Medical Association* took place in Peking in the spacious buildings of the newly-renovated Red Cross Hospital from January 27 to February 2, 1928 (simultaneously with the meetings of the Chinese Physiological Society). In spite of transportation difficulties due to the civil war, 189 delegates attended and many members of the Chinese Medical and Pharmaceutical Association took part in the deliberations, headed by their President Hou Shi-min (侯希民). Several other associations and institutions were also officially represented, including Hongkong University, the China Medical Association, the Rockefeller Foundation and the Council on Health Education.

The mornings were devoted to reading and discussing the 115 scientific papers presented according to specialities. Among the outstanding articles on Medical Education and State Medicine dealt with on February 2 were:—W. T. Ch'en's "What is Expected from School Authorities, School Physicians and Students"; P. Z. King's "Public Health Administration"; H. W. Kung's "The Activities of the Public Health Service in Harbin"; papers by S. H. Chuan, I. C. Yuan, S. T. Wang and J. A. Bussière dealing with Peking; J. B. Grant's "A Tentative Appraisal Form for City Health Work in China"; J. Cameron's "Pharmaceutical Education in China"; F. C. Yen's

(1399) Robertson, Chin. Med. Jl., 1932, p. 560.

(1400) Chin. Med. Jl., 1932, pp. 332, 334, 335, 436, 1934 Rep. of the Central Field Health Station.

"The Significance of Having One National Association for China"; F. C. Yen's "An Example of Joint Undertaking in Medical Education of Government and Private Institutions."

Four afternoons were devoted to clinical and laboratory demonstrations arranged by the staff of the Union Medical College. Two public lectures were delivered in English by Drs. John B. Grant and J. L. Maxwell, and two in Chinese by the former Minister and Vice-Minister of Education, Dr. Tang Er-ho and Dr. S. H. Chuan.

In his *presidential address* Dr. J. Heng Liu expressed satisfaction that, in spite of the disturbed condition of the country, so many delegates had attended. He then expressed concern at the closing of many mission hospitals and medical schools and his deep sympathy with them. While on the whole, little progress had been made during the biennium, signs of improvement were not lacking for many of the closed missionary institutions showed signs of being opened again.

"And, (the address continued) we are glad to note that more Chinese are assuming positions of leadership in the place of foreigners. It is true that the pioneer work in modern medicine in China was done by foreigners and that we are grateful to them, but it must be a satisfaction to them as well as to the Chinese that the number of qualified Chinese physicians is growing.

We feel that the time has come that Chinese of promise should themselves assume positions of responsibility, so that they may develop their native ability and genius unhampered, if modern medicine were to make any outstanding progress in this, so to speak, renaissance age which calls for a reconsideration of our table of values in all things educational....."

Progress was also demonstrated by the work of the Chinese municipal health department at Shanghai, while another auspicious event was the decision of the British Government (reached upon recommendation by the Commission under Lord Willingdon which visited China in 1926) to allocate 17% of the British indemnity funds (over half a million Chinese dollars a year) for public health and medical education in China. The hope was expressed that this amount would be spent wisely.

Another satisfactory sign was that a larger number of trained medical men were employed in military medical service; that requests came from generals for expert advice in the building of delousers to combat typhus, and that permission was given for the inoculation of anti-tetanus serum to wounded soldiers.

In other directions, however, there was much room for improvement, Dr. J. Heng Liu continued, and he emphasized the following points:—

1. That an amalgamation be effected between the National Medical and the Chinese Medical and Pharmaceutical Associations;
2. That the English section of the Journal be improved and the Chinese one be amalgamated with the journal of the Chinese Medical and Pharmaceutical Association;

3. That the Association should have a full-time administrative officer;
4. That the question of where to locate the permanent headquarters should be finally settled, thus far opinions diverging between Shanghai and Peking.

Finally the President protested against the policy of including drugs, scientific appliances and apparatus as well as surgical instruments among articles subjected to the new luxury tax.

The main *Resolutions* of the Conference were:—

- (1) Steps be taken for the *amalgamation of the two existing Associations* and the creation of a *Joint Committee* to realize this plan.
- (2) Negotiations be started with the Chinese Medical and Pharmaceutical Association for the publication of a *joint journal in Chinese* and with the China Medical Association for a joint "*Chinese Medical Journal*" (English Edition) (1401).
- (3) While appreciating fully the contributions which the foreign pioneers had made toward the problem of modern medicine in China and regretting the temporary suspension of many of their institutions, the belief was placed on record that
 - (a) The time has passed for the establishment for Chinese of new medical institutions whose policies have been determined only by non-Chinese;
 - (b) The period has passed in which foreign medical institutions can aid materially in the development of medicine in China without inviting Chinese leadership;
 - (c) That for the conservation of existing foreign medical institutions, there should be undertaken a far-sighted policy which would make them integral parts of the communities in which they are situated, thus promoting co-operative effort for medical progress and lessening the danger of dissipation of energies through competing institutions.
- (4) Those on *relations with the Government*, including a request for the compilation of a national *pharmacopoeia*, the need of Government support and co-operation for existing *medical schools and hospitals* and a protest against inclusion under the luxury tax of chemicals and scientific equipment.
- (5) The appointment of a *full-time executive secretary* for the Association.
- (6) The creation of a new *Committee on Research*.

A *Medical Guide* was distributed to all delegates which contained a directory of medical institutions and practitioners in China as well as a classified list of medical suppliers.

The Conference elected as *honorary members*, Dr. H. G. Earle, Dr. I. Inaba (President and professor in pediatrics, South Manchuria Medical College), Mr. Roger S. Greene and Dr. John B. Grant (professor of hygiene and public health, Peking Union Medical College).

(1401) A similar proposal was made by Dr. J. L. Maxwell (see Nat. Med. J., 1928, p. 51).

Sub-Committees were appointed on

- (1) Association Amalgamation; (2) Terminology; (3) Membership;
- (4) Publications; (5) Research; (6) Public Health(1402).

The 8th Biennial Conference of the National Medical Association was opened at *Shanghai* on February 2, 1930, by a reception, given jointly by the Chinese Physiological Society and the Nurses' Association of China, at which about 400 members and their guests were present. After Dr. F. C. Yen had given a short speech on behalf of the delayed President, the meeting was addressed by Miss Lillian Wu, President of the Nurses' Association; Dr. M. Y. Chu, Member of the Central Political Council of the National Government; Dr. Houki Hu, Commissioner of Health of Greater Shanghai; Dr. J. C. McCracken, representative of the China Medical Association and Dr. W. H. Kao, representing the Mukden Medical College.

As at the preceding Conference, the *scientific meetings* which began on February 3 and lasted until the 8th were devoted to specialties.

Meetings were also held by the Physiological Society and Nurses' Association. *Public lectures* were delivered by Dr. P. Z. King, Director of the Public Health Division of the Health Ministry on the problems of Mass Medical Treatment and Equipment; Dr. M. Y. Chu on the Prospects of China's Medical Education and by Dr. Earle (Director of the Lester Institute) on the history and plans of that institution.

Dr. R. K. S. Lim's *presidential address*(1403) pointed out that the military phase of national revolution had been replaced by one of reconstruction with great opportunities, but equally heavy responsibilities.

The efforts to unite the existing medical associations had been continued and as a first step towards this goal and with the aid of a generous and timely grant from the Rockefeller Foundation, a *full-time General-Secretary* had been appointed. It had been possible to secure the services of Dr. H. C. Tsao, formerly superintendent of the Changsha Hospital, but unfortunately, his excellent work had been curtailed shortly before the Conference by ill-health. It was, however, imperative to continue the work begun by him, namely the visiting of larger cities to maintain the contact between the different branches of the Association, the compilation of data on all physicians and surgeons, hospitals, dispensaries, medical and medico-social organisations, medical schools, and the publication of a medical directory(1404).

(1402) Nat. Med. J., 1928, pp. 27-50.

(1403) Published *ibidem*, 1930, p. 115.

(1404) Copies of this Directory (2nd Edition) were presented to each delegate.

Referring to the *National Medical Journal*, Dr. Lim stated that about a year ago the publication service had been transferred to Peiping and put in the hands of Dr. C. E. Lim, with the most gratifying results.

The negotiations with the China Medical Association in regard to amalgamation of the two journals, had been continued and would undoubtedly be crowned with success. The Chinese section of the *National Medical Journal* still left room for improvement.

The President then reviewed the situation created by the foundation of the *Medical Federation* and expressed the belief that both this and the National Medical Association ought to exist side by side:—

“We are”—said Dr. Lim—“in fact a National Association for the Advancement of Medicine, while the Federation is essentially a society for the protection of the interests of the profession.”

The great need for improvement in *Medical Training* was next emphasized and it was suggested that, on one hand, a few of the existing medical schools should be strengthened and experimental schools run in connection with them, in which the problem of providing the best type of medical instruction (with the teachers and funds probably available in the provinces) would be solved. On the other hand, schools with an efficient yet simpler standard as worked out in the experimental schools, should be founded as a temporary relief measure, their teachers to come from the high-class “normal” schools. *Post-graduate courses* should be connected with the latter so as to raise the standard of men already trained in schools below registration standard. In fact, the Association had already experimented with such courses at Peiping in co-operation with the National Medical University and the Union Medical College—the success attained being most gratifying.

Dr. Lim then stressed the necessity of establishing *medical centres* in place of the several, and often inefficient, medical institutions found in many of the larger cities. For the rural districts, the creation of a State Medical Service seemed essential. A first step towards this would be the centralisation of the medical services of the different government departments (e.g. Army, Navy, Customs, Post, Railways) under the Ministry of Health. The army medical officers, especially, might be trained to become rural health workers.

Dr. Lim finally emphasized the necessity of providing for *research work* upon which the hope for a bright future mainly rested.

The following *resolutions* deserve mention:—

1. To petition the Ministries of Health and Education to exert all their efforts toward ending the strike declared by servants and nurses of the *Medical College of the Cheloo University, Tsinanfu*.
2. To form a *Council on Health Education*,

3. To conduct a financial campaign for the erection of an *Association Building at Shanghai*(1405).

The Conference of the *China Medical Association*, which took place on February 6-13, 1929, at *Shanghai*, was attended by 144 members. Among the official delegates were representatives of the National Medical Association and the Nurses' Association of China.

Since Dr. Fowler had retired on account of ill-health at the end of 1927, the Conference was presided over by the Acting President, Dr. Arthur Woo, who gave a most stimulating *Presidential Address*. He first expressed satisfaction that China was reunited under one central government under whose enlightened leadership, a Ministry of Health had been formed, with Dr. J. Heng Liu as Vice-Minister. Next, he deprecated the state of public health in China which he ascribed to poverty, ignorance and selfishness. While the first factor was not within the province of medical men, they should strive their utmost to instil knowledge and a sense of social responsibility among the masses. Success in this tremendous task was only possible by uniting the forces of, not only other organizations like the National Medical Association and the Council on Health Education, but members of all branches of the medical profession and the Press.

Dr. Woo then went on to say that even if it were possible to carry out the plan of educating the masses, another great difficulty would remain, namely, the insufficient number of qualified medical men. Among a population of 400 millions, there were not more than perhaps 2,000 practitioners of western medicine, a large proportion of whom was concentrated in the cities. Even if it were possible to increase the number of schools and students rapidly, this aversion to settling down in the country would remain.

It had been proposed in other quarters to overcome this difficulty by establishing schools with a shorter curriculum. Dr. Woo took a decisive stand against this, stating that—while the scheme would lower the standard of the profession—it would not provide for the needs of the rural districts. The only way to improve the situation was the creation of a State Medical Service on the model of the Indian Medical Service.

The address then stressed the crying need for properly trained midwives and noted with satisfaction that a joint committee of the two Medical and the Nurses' Associations was sitting at Shanghai to discuss the question of midwifery training and to approach the government with proposals.

Turning to the future of the China Medical Association, Dr. Woo expressed the belief that

(1405) *Nat. Med. J.*, 1930, pp. 121-123.

the membership must become overwhelmingly Chinese, and the management of this Association must pass into Chinese hands, for no one can deny that the future of Chinese Medicine is in the hands of the Chinese themselves, and Chinese will eventually be the official language of the profession in China.

This idea was still far from being realized because, out of a membership of nearly 700, less than 100 were Chinese. One way to bring it nearer the solution, would be to amalgamate the whole profession into one strong unit. The careful consideration of this aspect was invited.

Dr. Woo expressed great satisfaction that a portion of the British Boxer Indemnity was to be used for medical purposes, and likewise welcomed the formation of the Lester Institute of Medical Research at Shanghai, with Professor Earle as its head. Emphasizing that all countries must continually exchange medical ideas with one another, Dr. Woo hoped that China would be able to make contributions to the store of medical knowledge.

In conclusion, Dr. Woo paid a warm tribute to Dr. Maxwell, who was resigning to join the Lester Institute.

Dr. Maxwell's *Secretarial Report* likewise contained many interesting points. He expressed satisfaction that the dark days of civil war, leading to the temporary closing of many hospitals were almost past and that the losses were not nearly as serious as anticipated and were more than outweighed by the gains.

Of the serious losses, a few hospitals had completely ceased to exist while others had not yet returned to normal conditions. Still more serious was the loss of some of the leading physicians who felt unable to work under the new order of things.

"On the side of gains"—Dr. Maxwell continued—"is the knowledge that the hospitals in China have completely vindicated themselves, that the welcome back to their stations of doctors who had been driven out has been very hearty and spontaneous, and that the powers that be have widely recognized the altruistic nature of our work and the value that it has for the country at large. In consequence of all this, the hospitals have reached a firmer and more stable position than ever in the past.

One even more important gain is the wider recognition of the unity of the medical profession in China. The value of the services of foreign physicians in this country and of their earnest desire to serve in whatever capacity they can be most useful has been very clearly shown. On the other hand, the ability of the leading physicians of China in taking the lead in all important medical enterprises, subject only to the numerical handicap of the fewness of such men for the size of this country, has been more than ever demonstrated....."

In discussing these aspects, there was much talk of closer organic union between the two Associations. The China Medical Association while heartily welcoming such plans, thought it well to remember

that unity can exist without such organic union and it is possible for union to be enforced without true unity.

Dr. Maxwell went on to emphasize how "absolutely and terribly inadequate" the supply of doctors was. Since the troubles of the past years had profoundly affected the medical schools,

the pitifully small stream of well-qualified scientific doctors has been reduced for the next few years to a mere trickle.

The necessity of concentrating upon problems of medical education was therefore evident.

Referring to the China Medical Association, Dr. Maxwell noted with satisfaction that this body had firmly maintained itself during the last very difficult biennium. The number of Chinese members, though still small in proportion, was steadily increasing and their contributions to the Journal of growing importance.

The one unsatisfactory report made was in relation to the Association's Councils, all of which, excepting that on Publication had practically ceased functioning, while that on Hospital Administration had faded away. In fact, the time had come to consider whether the councils should be dissolved as separate entities and their work handed over to Chinese bodies in whose deliberations the Association might share.

In his *Editorial Report*, Dr. Maxwell referred to the difficulty of catering, on one hand, to those whose interest in medicine was mainly scientific and, on the other hand, to those whose interest was almost entirely practical. He had tried to steer a middle course by giving the readers of the journal a fair proportion of articles of a technical nature while making it, as far as possible, a record of practical work. Of the former, he specially praised the contributions from the faculty of the Union Medical College at Peiping; among the latter he lauded the Section of Hospital technology, so ably edited by Dr. George Hadden. The closing of the Institute of Hospital Technology and departure, on furlough, of Dr. Hadden was deplored, but the hope was expressed that the section would be resumed.

In an appendix to his report, Dr. Maxwell touched upon the amalgamation of the Journal with that of the National Medical Journal in regard to which an almost complete understanding had been reached.

Public lectures, given at the Conference, were as follows:—Dr. K. C. Wong spoke on "China's Contribution to the Science of Medicine" (1406); Dr. H. Gordon Thompson gave a lantern lecture on "A Doctor's Wanderings in China's Far West"; Dr. J. Preston Maxwell addressed a meeting of the Shanghai Missionary Association on "The Contribution which the Medical Missionary Body can give to China in her Renaissance"

(1406) Published *ibidem*, 1929, p. 1193.

A novel and promising feature was the attempt at a *Pathological Exhibit* under the supervision of Dr. R. Cecil Robertson of the Shanghai Municipal Council Laboratory.

In addition to Dr. J. Heng Liu's article on Public Health(1326), the following deserve mention:—

C. Noel Davis	Public Health Ideals;
Hou-ki Hu	Public Health and Modern Medicine;
S. M. Woo	Health Education versus Health Legislation;
J. H. Jordan	Municipal Health Administration in the International Settlement, Shanghai;
Wu Lien-teh	Prevention of Infectious Diseases in China;
Alie S. Gale	Health Examination of Students in the American School;
Frederick Reiss	Ringworm and Public Health(1407).

Dr. H. G. Earle's report on behalf of the *Research Council* noted with satisfaction that a similar body had been created by the National Medical Association and hoped for joint work.

Steps to enlist the co-operation of the London School of Hygiene and Tropical Medicine and the International Health Board of the Rockefeller Foundation in *Malaria* research, had not led to a definite result, but it was noted that the Government of Hongkong intended creating the post of a Malariologist.

Work on *Diet and Metabolism* had been carried out with the assistance of Dr. F. G. Benedict, Carnegie Nutrition Laboratory, and in co-operation with the Chinese Physiological Society.

Dr. Earle hoped that, notwithstanding the foundation of the Lester Institute with a whole-time director of field research, the Association would continue its active interest in research work.

At the session of the *Missionary Division*, Dr. Frank Goddard read a paper(1408) on the staffing of mission hospitals, calling attention to the need for a sufficient staff. A resolution was adopted urging the Home Missions to continue the sending of medical missionaries. At the same time they were urged to give fuller support to the existing Mission Medical Schools.

Dr. H. H. Morris was *elected* as President with Dr. J. L. H. Paterson as Vice-president. Among the five members elected to the Executive Committee were two Chinese, Drs. W. S. New and F. C. Yen.

The election of an Executive Secretary was left to the Executive Committee, while Dr. H. Gordon Thompson undertook to act as Editor during Dr. Maxwell's furlough. Later, Dr. Maxwell agreed to continue as Honorary Secretary, while Mr. S. D. Main, formerly connected with

(1407) The last mentioned article is published *ibidem*, p. 244, all others in the 1929 Health (April) number.

(1408) China Med. Jl., 1929, p. 290.—Another contribution on hospital work was H. Owen Chapman's "The Annual Report of a Country Hospital," *ibidem*, p. 255.

his father's hospital at Hangchow, was appointed Business Secretary (1409).

The *Chinese Medical Journal*, representing a continuation of both the China Medical Journal and the English edition of the National Medical Journal, began to appear in January 1932. It was decided to continue with the numbering of the former so that the 1932 volume of the new journal bore the number 46.

Preparations for the amalgamation of the two associations were assiduously continued. On April 15, 1932, a joint meeting of the executive committees of both associations was held at Shanghai, presided over by Dr. F. C. Yen. Dr. Maxwell, representing the China Medical Association, and Dr. H. P. Chu, on behalf of the National Medical Association, reported that the question of amalgamation had been submitted by referendum to the respective members and had been almost unanimously accepted. Therefore the union was actually effected and it was decided that the assembly should elect a new committee, the two secretaries (Drs. Maxwell and Chu), acting as Nomination Committee. The result of the election was as follows:

President:	Dr. W. S. New,
Vice-Presidents:	Drs. H. H. Morris, Arthur W. Woo,
General Secretary:	Dr. H. P. Chu,
Treasurer:	Dr. K. Z. Faung,
Editors:	Drs. C. E. Lim, J. L. Maxwell,
Additional members:	Dr. J. L. H. Paterson, Dr. V. T. Loh, Dr. Frances King, Dr. T. K. M. Siao(1410).

The first Conference of the joint Chinese Medical Association was held at Shanghai in the newly built Henry Lester Institute of Medical Research during the week September 28-October 5, 1932, attended by 450 delegates, 107 of whom were foreigners. Appropriate addresses were given by Drs. F. C. Yen, H. H. Morris and J. Heng Liu who outlined the great progress in public health work and urged closer co-operation of the Association in the work undertaken by the Government.

In his *presidential address* Dr. W. S. New expressed gratification that in September 1931, the National Medical Association had been able to acquire a building of their own in Tszepang Road as headquarters which would now serve for the joint association. Here the nucleus of a medical library had been started where over 150 copies of current medical journals were on file.

Turning to the amalgamation of the two associations, Dr. New was hoping for successful work of the new group with a membership of 1,500 physicians. It had been possible to register the new association with the Ministry of Health and the local authorities. Dealing with

(1409) Ibidem, 1929, pp. 141-180, 281-289, 817.

(1410) Chin. Med. J., 1932, p. 538.

the desirability of a full time executive secretary, Dr. New paid a well deserved tribute to the work of Dr. H. P. Chu, Honorary Executive Secretary. He further expressed thanks to the Rockefeller Association who had granted financial support up to June 1933.

Some successful visits to medical centres in China had been made by Dr. New. Specially gratifying was it that, when visiting Tsinan together with Dr. Maxwell, arrangements were made for continuing and even intensifying the translation of *Chinese medical textbooks* under the Council on Publication of the China Medical Association.

Referring to the *Chinese Medical Journal*, Dr. New spoke with great praise of the editorial work of Dr. C. E. Lim. The circulation had been raised to 2,000 copies a month. In addition to this monthly English issue the *National Medical Journal* was to be published in Chinese every two months. Thanks to the labours of Dr. H. P. Chu, a third edition of the *Medical Directory* had been published.

Dealing with problems ahead, cooperation in improving the *standard of medical schools* seemed most essential. *Post-graduate training* was likewise much needed and a scheme was under consideration through which the Association would cooperate in this field with the National Health Administration. The organization of a *Council on Legal Defence* seemed most urgent. Of great importance was the formation of *local branches* of the Chinese Medical Society.

In addition to the meetings of 10 sections five general sessions were held with the following programme:—

- Medicine*: Gastric Function in Fever and Infectious Diseases (H. C. Chang);
Tuberculosis Problem in China (S. F. Bume);
The Relationship of Dermatology to General Medicine (F. Reiss);
Apoplexy (E. de Vries).
- Surgery*: Acute Appendicitis; Embryology and Anatomy (H. Gordon Thompson);
Symptomatology (T. Shen);
Treatment (J. Snell);
Post-Operative Treatment (T. Chen);
Moving picture on Infections of the Hand.
- Public Health*: Preliminary Survey of the 1932 Cholera Epidemic (Wu Lien-teh);
Some Aspects of Modern Quarantine (C. Y. Wu);
Notes on the Smallpox Epidemic in Amoy, 1931-32 (F. S. Wong);
Preliminary Report on the Rat Flea Survey at Shanghai (C. Y. Wu);
Present Plague Situation in China (R. Pollitzer).
- Research*: Statistics and Medical Research (P. G. Edge);
Discussion opened by Dr. Earle.
- Leprosy*: The Present Status of the Leprosy Question in China (Wu Lien-teh);
Leprosy—The Present Problem and the Organisation of Research (H. W. Wade);
Work and Influence of Mission Institutions in Relation to the Existing Leprosy Situation (W. H. P. Anderson).

The report of the *Council on Publication* (Dr. P. L. McAll) referred to the final meeting of the Medical Section of the *Scientific Terminology Association* of China, held at the close of the Conference

in Shanghai. The work carried on since 1915 had resulted in a codification of all the important terms in the Council's Lexicon.

Great sorrow was expressed at the death of Dr. P. B. Cousland in June 1930 and Dr. Voon-ping Yui later in the same year. A matter for great regret was also the closing of the Presbyterian Mission Press in 1931 which had carried on work for 87 years and had printed the bulk of the books published by the Council. A sad blow was further the destruction of the Commercial Press plant during the Japanese invasion, causing a serious loss to the Council. The Mission Book Company, which had acted for many years as selling agent of the Council, closed down so that arrangements with the Kwang Hsueh Publishing House became necessary.

The activities during the period 1929-1931 were thus summarized:—

1. *New work.*—Re-translation of Gray's Anatomy, publication of Gwynne Williams' Minor Surgery, Saint's Surgical Note-taking (Dr. Chang), Introduction to Local Anaesthesia, completion of Zinsser's Bacteriology (Drs. Yu, Li and Tang, Peiping), re-translation of Halliburton's Physiology (Drs. Evans and Kilborn), translation of Epitome of Materia Medica based on U.S. Pharmacopoeia, Appendix to Evans' Obstetrics, re-translation of Rose and Carless' Surgery, Vol. I, compilation of Handbook on Care and Feeding of Children (Dr. Scott) and Manual of Toxicology.
2. *New editions or revisions.*—6th and 7th editions of English-Chinese Lexicon, new editions of Hare's Therapeutics, Read's Materia Medica Tables, Clinical Medicine, Stitt's Bacteriology, Stitt's Parasitology, Appendix to Osler's Medicine and Heimbürger's Skin Diseases.
3. *Reprints.*—Rose and Carless' Surgery, Meuser's Pharmacy, Evans' Obstetrics, Holt's Children's Diseases, Hygiene and Public Health, Insanity, Roller Bandage, New Treatment of Fractures, etc.

In conclusion it was pointed out that the Council, whose finances were in a very satisfactory condition, had enjoyed a large measure of independence. The constitution of the new Chinese Medical Association provided for the appointment of seven members by the existing Council and three by the Association.

Since the report of the *Council on Medical Education* dealt principally with the work of the National Commission on Medical Education, it will be referred to in the next section of this chapter. A resolution adopted petitioned the Government

to form a National Board of Medical Examiners to be composed of competent representatives from the Government, Medical Colleges and Medical Associations, and that before taking such a step the formation of such a board be entrusted to the Chinese Medical Association.

The newly organized *Council on Public Health* (Dr. Li Ting-an) submitted a constitution and a tentative two-year program.

A *Council on Medical Missions* was organized on the lines adopted in case of the Council on Publication.

The following resolutions were passed by the Conference:—

1. This Association welcomes the invitation of the Director of the National Health Administration to cooperate with the Government in promoting the development of medical science and research in this country and cordially assures him of its full support whenever the Government invites the expert services of the various Councils constituted by the Association.

2. Whereas the National Medical Association of China and the China Medical Association combined on April 15, 1932, to form the Chinese Medical Association, and whereas many of the resolutions and papers read at the Conference were brought forward solely in a foreign or the Chinese language, thus making it impossible for many who do not understand the foreign language concerned and for others who do not understand Chinese, to follow the proceedings and discussions.

Be it resolved that in future conferences all papers and resolutions submitted shall have an abstract prepared in Chinese and English, and further that such abstracts shall be sent beforehand to the General Secretary in time to allow of their being printed in Chinese and English and distributed to the delegates at the beginning of the meetings.

3. In view of the importance of autopsy in determining the causes of death in many cases and in view of the lengthy procedure and inevitable delays which are caused in obtaining the necessary permits under the regulations regarding autopsies promulgated by the Government in May, 1928,

Be it resolved that the Government be petitioned that as soon as permission for an autopsy is secured in writing from the immediate family or close relatives of the deceased and witnessed by the local police, the physician in charge be authorized to proceed with the postmortem examination without further delay.

4. That in the opinion of this Conference, the use of the title *Kuo I* by practitioners of the old system of medicine, implying as it does official connection with the State, is derogatory to the dignity of our country and misleading to the public and that the Chinese Medical Association should make immediate representations to the Government to prohibit the improper use of such title.

5. That in view of the support accorded to the suggestion relating to the collection of data on the prevalence of disease in China outlined by Major Edge at the General Session meeting on Research on October 4, this Association heartily supports the proposals for the establishment of a uniform scheme for the carrying out of this useful piece of work, and further that the Research Council of the Association be invited to provide for the organization of the simple but practical details which this work will demand.

6. That in view of the great shortage of doctors in China, trained in modern medicine, this Conference records with much satisfaction the decision of the Government to establish more "special" medical schools in the country. It hopes that the Government may, in addition to its own, encourage the establishment of these schools by competent bodies under private auspices; but in order to safeguard standards the Government is urged to adopt at an early date a detailed minimum requirement and curriculum of this type of schools (1411).

The second Conference of the Chinese Medical Association held in Nanking from March 31 to April 7, 1934, opened with addresses by Mr. Wang Shih-chieh, Minister of Education, and Dr. J. Heng Liu, and the presidential address read on behalf of Dr. W. S. New who unfortunately was prevented through illness from giving it personally.

(1411) W. S. New, *Chin. Med. J.*, 1932, p. 1025; *ibid.*, pp. 1045, 1120; Edge, *ibid.*, p. 1071.

The *Presidential Address*, while referring details of administration to the report of the executive secretary, mentioned the following salient points: The *Library* had made satisfactory progress both as to bound volumes and to current journals now numbering 250. Most gratifying was it also that from January 1934 onwards the *National Medical Journal* appeared monthly. For the sake of convenience its editorial offices had been transferred from Peiping to Shanghai. A new edition of the *Medical Directory* was under preparation.

After referring shortly to very successful *postgraduate courses* held in the past year and to *legal assistance* given to members, Dr. New stated that the membership had risen to 1,700. Since, however, the number of scientifically trained medical men in China was estimated at 6,000, there was still much room for improvement.

There was no doubt that the present accommodation in the Association building had outgrown the rapidly increasing demands for space and ways and means were suggested for improving this state of affairs.

The matters touched upon in Dr. New's address and some other problems were exhaustively dealt with in the Report of the General Secretary, Dr. H. P. Chu:

Gratifying though the growth of the *Library* was, the need for back numbers of the important journals was most urgent.

After discussing the progress of the *National Medical Journal* Dr. Chu stated that with the help of numerous medical institutions in Shanghai five *postgraduate courses* were given in the year 1933 with a total enrolment of 38 students. These were 18 in Public Health, 14 in Pulmonary Tuberculosis, 3 in Internal Medicine, 1 in Orthopaedics and 2 in Biochemistry.

As mentioned by Dr. New, new Chinese and English editions of the *Chinese Medical Directory* were under preparation.

Dr. Chu then discussed the plans for new *Association Headquarters* and dwelt upon the attitude of the Association in regard to *Medical Ethics*, especially the question of advertisements in the daily press, and the services of the defence department of the Association.

A deliberate stand had been taken by the Association against the plan giving the *Institute of Native Medicine* administrative power, thus bringing the old-style physicians under its control.

The National Health Administration had invited a number of medical organizations to express opinions in regard to a revision of *rules for autopsies*. Those consulted were unanimous in requesting that changes should be introduced and it was gratifying that the request of the Association was granted with some modification.

Under temporary revised regulations for the registration of medical practitioners issued in July 1932 (1412), a number of persons who had not graduated from regular medical schools, had been granted licenses to practice. The question whether to admit these to the Association was a most important one.

Besides meetings of 11 sections four *general sessions* were held, one of which was devoted to problems of *Hospital Standardisation*. The programme of the others was as follows:—

- Medicine:** Viable Leishmania in Nasal and Oral Secretions of Patients with Studies bearing on the Transmission of Kala-azar (C. E. Forkner and L. S. Zia);
 Splenomegaly in "Banti's Disease" and Cirrhosis of the Liver (Hu Cheng-hsiang);
 Treatment of Malaria with Atebrin, Malarican, Plasmochin and Totaquinine (D. B. Liu and Y. C. Yao);
 Clinical Study of Scarlet Fever in North China (R. H. P. Sia, Keh-wei Huang and Wu Jui-ping);
 Interrelations of Biometric Methods and Clinical Observations in the Appraisal of Physical and Nutritional Status (P. H. Stevenson).
- Surgery:** Thoracic Surgery in the Treatment of Pulmonary Tuberculosis (T. C. Liu);
 Indication and Result of Phrenic Nerve Operation in Pulmonary Tuberculosis (T. T. Wang and H. Y. Tang);
 Phrenisectomy and Thoracoplasty in Pulmonary Tuberculosis (J.R.B. Branch);
 Analysis of Deaths in Surgical Service during a Period of Five Years (J.R.B. Branch and K. C. Wen).
- Public Health:** National Health Administration (J. Heng Liu);
 Municipal Health Administration: Shanghai (T.A. Li);
 Peiping (I.C. Fang);
 Nanking (T.H. Wang).
 Rural Health and Health Centres (H. Y. Yao, C. C. Chen and W. Chang).

According to the report of the *Council on Medical Education* (F. C. Yen), great attention had been paid to the preparation of a curriculum for pre-medical and medical training of six years. The draft of this had been sent to all medical schools of China and to others interested in the subject and with their assistance a detailed scheme had been worked out.

In the field of *postgraduate teaching* the good progress made at Shanghai was noted. Equally gratifying was it that the National Health Administration in Nanking in conjunction with the Central Hospital was offering a practical course to graduates, the training requiring two years on a rotating basis of six months each in Surgery, Medicine, Obstetrics and Public Health.

Close cooperation had been maintained with the Council on Publication and attempts were made to bring together those interested in problems of medical education.

(1412) See Chin. Med. Jl., 1932, p. 935.

It was satisfying to note that the Ministry of Education was instituting an official examination to the graduating classes in all medical schools. The time seemed opportune to recommend to the Ministry and the National Health Administration conjointly to appoint a permanent board of examiners which would serve under the direction of the Commission on Medical Education.

The progress of medical education was satisfactory. Mention was made in this connection of the establishment of the Central Hospital and the Central Field Health Station. The Army Medical School had been reorganized and an experimental school was organized at Nanking aiming to supply doctors with training adapted to the peculiar needs of China. Another interesting experiment was developed at Changsha with a medical curriculum giving due emphasis to Preventive Medicine and Public Health. The Ministry of Education had appointed two commissions to survey the medical schools in East and North China.

Suitable resolutions were recommended and in an appendix principles regarding medical education were laid down.

The *Council on Publication* reported the following progress:—

New work.—Introduction to X-Rays by Dr. Sturton; Manual of Toxicology by Dr. Read.

Translations and Revisions.—Cunningham's Practical Anatomy, Vol. I; English-Chinese Medical Lexicon, 8th edition; A.M.A.—Useful Drugs; May's Diseases of the Eye; Read's Materia Medica Tables; Heimbürger's Syphilis.

Dr. Earle, rendering the report of the *Council on Research*, stated that at the previous conference it had been agreed to institute an *Epidemiological Survey* of hospitals and that the Henry Lester Institute had consented to take responsibility for this. The Institute was prepared to continue its part in this work until the close of 1934. Thereafter it was suggested that surveys of special diseases should be carried out and the Henry Lester Institute would be prepared to assist in these.

Dr. Li Ting-an, presenting the report of the *Council on Public Health* drew attention to the foundation of the Public Health Club and the Anti-Tuberculosis Association of China in Shanghai. The following reports were rendered:—

Dr. R. C. Robertson, Report of the Committee on the Review of Public Health Literature; Dr. J. B. Grant, Report of the Committee on Survey of Urban Public Health Practice in China; Dr. T. A. Li, Report of the Committee on Survey of Rural Public Health Practice in China; Dr. Chang Wei, Report of the Committee on the Institution of Preventive Measures in Hospitals; Dr. Chang Wei, Report of the Committee on the Minimum Curriculum for Public Health Training in Medical Schools.

The report on the *Chinese Medical Journal* recorded steady progress in spite of many difficulties. A new feature were *special numbers* on leprosy, obstetrics and gynaecology, and parasitology.

The Conference decided to admit all practitioners recognized by the National Government into the organization as *associate members* without voting privileges which remained reserved to the fellows. A *Board of Trustees* was created to take care of the property and funds of the Association (1413).

An epochal event in the history of Chinese Medicine was the third Conference of the Chinese Medical Association held in Canton from November 1-8, 1935, in conjunction with the celebration of the 50th anniversary of the beginning of Dr. Sun Yat-sen's medical and revolutionary work and of the 100th anniversary of the Canton Hospital where scientific medicine was first taught in China by Peter Parker. Over 400 delegates attended and 220 papers were presented including those from the Chinese Physiological Society and the Chinese Society of Pathology and Microbiology which were holding their annual meetings concurrently with the Conference. A symposium "On the Stones of the Urinary Bladder" was held which proved an outstanding success.

The Presidential Address, delivered by Dr. C. E. Lim in Chinese, dealt with the great events celebrated by the Conference and the remarkable progress of scientific medicine in modern China. In conclusion the hope was expressed that

the record of one hundred years we are now celebrating will be eclipsed by the achievements of the next decade, and that the medical profession which has supplied this land with the father of the Chinese Republic, will take the leadership in the medical and public health reconstruction of this country.

Dr. Wu Lien-teh also delivered an oration on "One Hundred Years of Scientific Medicine" in which he advocated the use of the word *new* (新) in preference to *western* (西) medicine so as to avoid misunderstanding and prejudice.

The Report of the General Secretary H. P. Chu recorded a membership of 2,039 in 1934, representing an increase of 390 members for one year. Among these were 15 associate members.

The Chinese edition of the *Medical Directory* had been published in April 1934, followed by the English edition early in 1935.

The Association had authorized its Council on Public Health to form an *Anti-Venereal Disease League* and under the auspices of this a clinic had been opened at Shanghai where free treatment was given by five volunteer physicians headed by Dr. F. K. Chen.

Through the help of the Association 32 physicians had been granted registration with the National Government and members were urged to take advantage of this service.

Three *special reports* had been issued during 1934-35, namely, "The Present Efficiency of Hospitals in China" (Dr. J. A. Snell);

(1413) W. S. New, *Chin. Med. J.*, 1934, p. 385; *ibid.*, pp. 395, 489, 1083; Grant & P'eng, *ibid.*, p. 1074; Li Ting-an, *ibid.*, p. 1086.

"Schistosomiasis in Egypt and its Bearing on the Schistosomiasis Problem in China" (Dr. G. Rose); and Chinese Medical Journal Index 1924-1933 (Dr. J. L. Maxwell). A special report on *medico-legal cases* was likewise published in Chinese.

A property adjoining the present building of the Association in Shanghai was acquired, thus making possible an enlargement of the headquarters.

The report of the *Council on Publication* was rendered by Mr. T. C. Leo, as Dr. McAll had left China after having given full-time service to the Council for 16 years. The following list of publications was submitted:—

New work and translations.—British Red Cross Society First Aid Manual; Pathological Histology (P. C. Hou and F. H. Mosse); Easy Chinese Medical Reader; Eden and Holland's Manual of Midwifery; Cameron's Biochemistry; Textbook of Physiotherapy (Miss Nunn and L. M. Ingle);

Re-translations and revisions.—Holt and Howland's Diseases of Infancy and Childhood; Experimental Physiology (L. G. Kilborn and P. S. Evans); Rose and Carless' Surgery; Thorington's Refraction; Stitt's Blood Work and Body Fluids; Appendix to Osler and McCrae's Principles and Practice of Medicine; Read's Materia Medica Tables and Notes; Cunningham's Practical Anatomy, Vol. 2; Hare's Therapeutics; The Venereal Diseases, Surgeon General, U.S. Army; Stengel's Pathology; Hutchinson and Hunter's Clinical Methods.

In the press were:—Wheeler and Jack's Handbook of Medicine; Cunningham's Practical Anatomy, Vol. III; Bruce and Dilling's Materia Medica; Halliburton's Physiology; Care and Feeding of Infants and Children.

Dr. J. L. Maxwell pointed out in the report of the *Council on Research* that during the previous biennium a general survey of diseases had been made and that it had been decided to follow this with a collective investigation of special diseases. These were:—Kala-azar, Relapsing Fever, Leprosy, Malaria, Cholera, Dick Test, Dental Caries, Mottled enamel, Birth weights and infant growth, Muscle abscesses, Stone in the urinary tract, Acute abdomen and appendicitis. It was unfortunate that Dr. H.S. Gear, who did most interesting work on the general survey of diseases, had left China, but the work was vigorously carried on, a large part of it being performed by members of the Henry Lester Institute of Medical Research.

In the report of the *Council on Medical Education* Dr. F. C. Yen pointed to the excellent progress made in medical educational work under government auspices. It was clear that the Council could no more claim the position of leadership but should work in close cooperation with, and behind, the Government.

Adopting this policy the Council took part in the preparation of the *medical curriculum* eventually adopted by the Ministry of Education and of the rules governing *State Medical Examinations* which had been adopted by the Examination Yuan but had so far not been put into execution.

Great attention was paid to *Postgraduate Instruction*, the following courses having been offered in Shanghai to a total of 177 students:—

Two courses of six weeks each in Tuberculosis; a two-week course in Biochemistry; a four-month course in Internal Medicine; a three-month course in Orthopaedics; a six-week course in Public Health; a course in Paediatrics; a course in Radiology.

It was hoped that with the appointment of Dr. E. H. Hume as Medical Adviser to the National Health Administration and jointly as Executive Secretary of the Council on Medical Missions closer cooperation may be established in carrying on the education work under missionary auspices as an integral part of the National Program.

Dr. T. F. Huang reported as chairman of the *Council on Public Health* on the foundation in April 1935, of the Anti-Venereal League already referred to. The *Anti-Tuberculosis Association of China*, in the work of which members of the Council took a prominent part, had established two clinics in Shanghai and carried on extensive propaganda in the city. Branch societies in Soochow and other cities were being organized. To coordinate rural reconstruction work around Shanghai an *Association for the Improvement of the Rural Districts of Shanghai* had been formed. The Health Committee of this, under the chairman of the Council, had started preventive and curative services, aided by a grant from the Rockefeller Foundation.

The report of the *Council on Medical Missions* (Drs. J. Lee H. Paterson and J. L. Maxwell) expressed the hope that cooperation between the public health authorities and the medical missions would be greatly promoted by the appointment of Dr. Hume. The deaths of Dr. Duncan Main, formerly of Hangchow, of Dr. J. G. Cormack, formerly of Peiping and of Dr. J. R. Wilkinson at Soochow, were deplored.

Important steps taken at the Conference were the formation of a new *Council on Pharmacy and Chemistry*, the adoption of a resolution to form *Branch Councils of Medical Defence*, and the sanction of the appointment of committees on *Medical History*, *Contraception*, and *Psychiatry and Neurology*. At a joint meeting of the Chinese Physiological Society and the Chinese Society of Pathology and Microbiology it was also resolved to adopt a "Memorandum on the Conditions which should govern the Use of Animals in Medical Research" by Prof. B. E. Read(1414).

Another auspicious gathering was the 9th Congress of the *Far Eastern Association of Tropical Medicine*, held at Nanking, October 2-8, 1934, presided over by Dr. J. Heng Liu and attended by more than 400 members. At the opening ceremony speeches of

(1414) Chin. Med. J., 1935, p. 1321.

welcome were given by Mr. Wang Ching-wei, President of the Executive Yuan, General Huang Shao-hsiung, Minister of Interior, and Mr. Shih Ying, Mayor of Nanking, and a message of greeting was sent by Mr. Lin Sen, President of the National Government. Lt.-Colonel A. J. H. Russell, Public Health Commissioner with the Government of India, speaking on behalf of the foreign guests, paid a warm tribute to the great progress in medicine and public health witnessed by the delegates.

The *scientific sessions* of the Congress began on October 4 and lasted until October 8, during which time 21 sessions were held. A total of 203 papers were presented in the ten sections as follows:

<i>Section:</i>	<i>Chairmen:</i>	<i>No. of Papers:</i>	<i>No. of Sessions:</i>
Bacteriology	Profs. C. E. Lim and T. Mitamura	21	2
Leprosy	Dr. H. W. Wade	12	1
Malaria	Dr. A. L. Hoops and Prof. E. W. Walch	28	2
Medicine (including Dermatology)	Drs. G. V. Allen, R. D. Fitzgerald, E. H. Hume, Kwa Tjoan Sioe, Prof. N. Onodera	34	5
Parasitology, Helminthology & Medical Entomology	Drs. Koidzumi, O. K. Khaw and G. Rose	37	3
Pathology	Prof. C. D. de Langen and Dr. T. Ogata	10	1
Physiology, Pharmacology, Biochemistry	Profs. R. K. S. Lim, J. L. Rosedale and Dr. B. E. Read	23	3
Plague and Cholera	Drs. A. R. Wellington and H. F. Smith	7	1
Public Health and Quarantine	Drs. B. Borcic and Phra V. Vidhikar	9	1
Surgery, Obstetrics, Radiology, Ophthalmology, Dentistry	Drs. J. Jourdran and H. Gordon Thompson	22	2

In addition *Round Table discussions* were arranged on *Plague* (Chairman Dr. C. G. Pandit) and on *Cholera* (Chairman Lt.-Col. A.J.H. Russell).

The *Transactions*, two volumes covering almost 2,000 pages edited by Drs. Wu Lien-teh and C. Y. Wu, appeared within six months of the close of the Congress, which may be said to constitute a record for publications of this kind (1415).

Turning to the foundation of new medical and public health organizations mention must first be made of the formation in 1929 of the *Chinese Society of Microbiology* which had for its object the

(1415) Ibid., 1934, p. 1161 and Transact. of the 9th Congr., F. East. Assoc. Trop. Med., Vol. I, p. 26.

the promotion of research in microbiological sciences and the facilitation of intercourse between workers in this field.

Active membership was made available to

any person resident in China who has been engaged in research or in teaching in connection with microbiology including bacteriology, parasitology, biology or any allied sciences and who has published one or more original papers in this field(1416).

Proceeding in chronological order we come next to the *West China Council on Health Education*. As can be gathered from the 1930 report, the activities of this newly-founded organization were classified under the following heads:—Translation, Publicity, Campaigns, Publications, Welfare work, Smallpox eradication, Health Demonstration Area(1417).

The *Chinese Ophthalmological Society of Peiping* was founded on May 20, 1932, with the object of advancing ophthalmological science in China in all its varied aspects. Regular meetings are held every month, the proceedings of which are published in the *Chinese Medical Journal*(1418).

The history of the *Shanghai Public Health Club* also goes back to the year 1932 when at a meeting of public health workers the foundation of such an organization was decided upon and Drs. Li Ting-an and W. Chang were asked to prepare a draft of the constitution. This was accepted at a meeting held on January 5, 1933, in the Chinese Medical Association building. According to the constitution members of the Chinese Medical Association and public health workers in Shanghai were eligible as members of the Club, the purpose of which was to provide periodical conferences for intellectual and social recreation. Officers elected were Drs. Wu Lien-teh (Chairman), Li Ting-an (Vice-Chairman), Dr. W. Chang (Secretary-Treasurer).

The hopes set in the foundation of the Public Health Club may be said to have been amply realized. It not only provides most interesting information for its members through a carefully chosen program of lectures delivered both by workers in Shanghai and guests, but its discussions have contributed much to the progress of public health work in Shanghai. It has been stated for instance that the idea to found an *Anti-Tuberculosis Association* goes back to a discussion on tuberculosis at the inaugural meeting of the Club(1419).

The *Chinese Pathological Society* owes its inception to circular letters sent at the initiative of Drs. D. Y. Ku, R. C. Robertson and F. F. Tang in September 1933, to a number of leading scientists, asking

(1416) *Nat. Med. Jl.*, 1929, p. 464.

(1417) Wallace Crawford, *China Med. Jl.*, 1930, p. 953; *ibid.*, 1931, p. 469; *Chin. Med. J.*, 1932, p. 552.

(1418) *Chin. Med. Jl.*, 1932, p. 729, 1933, p. 734.

(1419) *Chin. Med. Jl.*, 1933, p. 414.

if they would agree to a such a foundation. Over 30 favourable replies having been received a meeting was held in the Henry Lester Institute on November 3, 1933, at which a constitution was adopted, admitting any person interested or engaged in teaching or research in pathological or allied sciences as eligible for membership. The Society was formally inaugurated on December 1, 1933 when it was decided to elect annually two members as Secretaries, one as Treasurer and four as committee members. No chairman was elected as the meetings were to be held in various laboratories under the chairmanship of their respective heads.

Besides some gatherings in Shanghai an important meeting was held at the time of the 1934 Conference of the Chinese Medical Association in Nanking, the program of the pathology section being arranged by the Pathological Society. At the same time a convention was held with the members of the Chinese Society of Microbiology and it was decided to amalgamate the two societies under the name of *Chinese Society of Pathology and Microbiology*. A meeting of this was held jointly with the 1935 conference of the Chinese Medical Association at Canton. The papers read upon this occasion on Pathology, Bacteriology and Parasitology were published in a bulky supplement of the Chinese Medical Journal, appearing in February 1936(1420).

Two other societies founded in 1933 were the *Association of Medical Specialists of Shanghai*(1421) and the *Shanghai Pharmaceutical Association*(1422).

As in case of public health work, a powerful and most beneficial influence was exerted by the central authorities in Nanking upon endeavours in the field of *medical education*.

A most important step was the formation, in December 1929, of a *National Commission on Medical Education* by the Ministries of Education and Health(1423). The two Ministers and two other representatives from each Ministry were ex-officio members of this commission, five further members were chosen among medical experts in addition to advisers (both Chinese and foreign). In collaboration with the League of Nations Professor Knud Faber of Copenhagen University came to China to assist the Commission in its work. Staying from September to December 1930, he visited many medical schools and hospitals and drew up a valuable report from which we have already amply quoted. Nevertheless a general analysis of the report is called for.

(1420) Chin. Med. Jl., 1934, pp. 182, 400, 1936, Suppl. I.

(1421) Chin. Med. Jl., 1934, p. 197.

(1422) Ibid., 1933, p. 404.

(1423) Ibid., 1932, p. 1181.

In the preamble, Dr. Faber points out that in 1928 the Minister of Education appointed a Committee to study the question of Medical Education, which, in its turn, proposed a plan for the next ten years. The main points of this were that there should be two types of institutions, viz.: (a) The Medical College; (b) The Special Medical School—the latter to train practitioners of medicine, the former to produce a higher type of medical worker.

This plan found approval when the Commission on Medical Education, set up jointly by the Ministries of Education and Health, met for the first time on February 18, 1930. It was found necessary, however, to deliberate further upon this policy, and in connection with this plan, the League of Nations was asked to send an expert to China to help in the solution of the problem. Accordingly, Dr. Faber came, arriving in Peiping in September and leaving in December. The questions he was called upon to study especially were:—

- a. The present status of medical schools in China;
- b. Future policies;
- c. Whether there should be one or two standards in medical schools in China;
- d. What the minimum standard for a medical school in China should be, taking into consideration the financial condition of the country and the urgent need for a large number of medical practitioners;
- e. What the minimum hospital facilities should be to enable a school to teach clinical medicine adequately;
- f. Whether it is wise to include nursing, midwifery, pharmacy and dentistry under the Commission on Medical Education.

In the introduction to the report, the number of modern-trained doctors in China is estimated at 4-5,000, i.e., one for 80-100,000 population(1424). Thus, in order to have one physician for 8,000 persons, about 50,000 doctors would have to be educated in the near future.

The need for hospitals is likewise very great. The Medical Directory of the National Medical Association, published in February, 1930, mentioned about 500 hospitals, half of them missionary ones. Dr. Faber states that, excepting the last-mentioned and the hospitals connected with medical schools and military hospitals, most of the institutions could be described as private clinics or nursing homes. Only few municipal hospitals for the poor existed, and those seen by Dr. Faber impressed him very unfavourably. He expresses the hope that in each provincial centre and big city, a large and specialized hospital would be set up and smaller ones in towns. Small hospitals scattered through the country should have travelling dispensaries attached to them. The need for central control and supervision of these institutions is strongly emphasized.

The next part of Dr. Faber's report on existing medical schools was considered by us when dealing with individual undertakings. To

(1424) The official figure furnished by Dr. J. Heng Liu is 8,515 up to August 1935.

sum up, Dr. Faber says that there exist only 13 medical schools providing satisfactory training (1425) which graduated in the preceding year about 180 doctors.

The reasons usually given to explain this small number of graduates are:—

1. There is little interest among young people for the study of medicine;
2. The long course is too expensive;
3. The entrance requirements are too difficult so that a great number of applicants do not pass;
4. The medical schools are not sufficiently equipped and staffed to teach more students in a thorough way;
5. The prospects after graduation are not commensurate with the time and money spent.

Faber adds that

there is, in the schools mentioned, a strong feeling of their responsibilities in producing very well-trained medical men to extend and defend the principles of modern western medicine and not so much a feeling of duty to educate as large a number as possible to relieve the need of doctors in China.

Discussing this situation further, Dr. Faber recognizes the validity of the reasons enumerated above and endorses the plan of having two sorts of medical schools, doing at the same time everything possible to raise the number of graduates in the existing schools of higher grade.

He then discusses how to develop special medical schools of the lower type. The plan to attach them to existing medical colleges was not recommended and

if a large number of doctors are to be educated in the near future, a certain number of independent special medical schools must be established, eventually perhaps one in each province. They should each educate and graduate at least 60 doctors yearly, rising in the future to 100.

In order to educate 50,000 doctors in the country in the next 50 years, 1,000 should graduate every year. The University Medical Colleges could be encouraged to educate from 3-400 yearly. For educating the last 6-700, 7-10 Medical Special Schools would be required in the near future.

Dr. Faber believes that it would be best to establish first a single experimental or model special school, proposing among others the following points:—

1. Teaching ought to be in Chinese, but one foreign language, preferably English, should be taught.
2. The school should be organised as a national Chinese school and not according to some standard adopted in foreign countries, so as to meet the nosological and economic situation of China;

(1425) This list comprises, besides the four National University schools—National Central University and Tung-chi at Shanghai, Sun Yat-sen University at Canton and Peiping University—, the Peiping Union Medical College, the Japanese College at Mukden. St. John's School at Shanghai, West China Union Univ. School at Chengtu, Shantung Christian Univ. School at Tsinanfu, Mukden Medical Missionary College, Hackett Medical College at Canton, Women's Union Christian Medical College at Shanghai and Aurora University Faculty of Medicine at Shanghai which Faber considers together with the Protestant missionary undertakings.

3. For the time being it would perhaps be necessary to require that the applicants come from a middle school with a good science course, as conditions vary.
The entrance examination ought to be not too difficult, embracing possibly only the Chinese and English languages and mathematics.
4. If teaching is to be done in four years, trimestral teaching with 11 weeks in each trimester should be adopted. The basic and pre-clinical sciences should take 1 1/3 year, the clinical and pathological 2 2/3. Requirements could be safely lowered in certain respects, not insisting for instance upon all the details with which anatomy is taught. Physiology could include a branch of "applied physiology" with demonstration of patients exhibiting edema and similar pathological features.
5. The greatest stress should be laid upon clinical teaching in the attached hospital which might be one of the new establishments to be created in provincial centres. The teaching hospital should have at least 280, if feasible about 300 or more beds, 100 surgical, 100 medical, 30 for tuberculosis, 20 each for isolation and maternity cases and 10 each for eye, ear and skin diseases. The hospital should not be quite separated from the school.
6. The instructors in the great pre-clinical disciplines must be full-time men, the clinicians should be permitted to have consultative practice. A number of 14 teachers, 7 in the theoretical and 7 in the clinical disciplines would suffice.
7. Graduates of schools supported by public funds should for some years after graduation be compelled to take official positions outside the big centres. For public health work, however, an extra course would be necessary.
8. While naturally hesitating to propose a location for the model special school, Dr. Faber feels impelled to propose that reconstructing the present Naval Medical College, Tientsin, be chosen, the old valuable site to be sold and the Paotingfu school to be absorbed.

Finally, Dr. Faber recommends for the Medical Colleges a standard of two pre-medical and five medical years (the last year for internship) as advised by the ministerial committee.

The duty of the Medical Colleges is not only to educate highgrade practitioners but physicians able to act as teachers or administrative heads of institutions. Post-graduate courses, useful as they would be in other respects (e.g. enabling graduates from the lower-grade schools to attain higher qualifications) would not suffice for this. In order to do justice to this branch of the work, a distinction must be made between the theoretical disciplines and the clinical ones.

The only way to become qualified as a teacher in one of the theoretical disciplines, is to work some years as assistant and research worker in a well organised and scientifically conducted institute. The best plan would be to start with such work in China and complete it abroad.

In regard to the preparation of clinicians, Dr. Faber strongly advocates that clinical training should first and foremost be done in China. It is therefore essential that facilities for such work, as they exist in the Peiping Union Medical College and some other schools, should be increased.

Turning to the question of auxiliary personnel, Dr. Faber deprecates the idea of educating *Assistant Surgeons* for the rural districts to practise on their own. Such men might be employed as helpers under strict supervision.

The missionary endeavours to train *technicians* (see below) are appreciated and it is opined that the Government should take up such training, e.g. in the Nanking Central Hospital.

Likewise, the training of *pharmacists* should be kept in mind. As already stated, Dr. Faber recommended the continuation of the Hangchow school as a training centre for these men.

After bestowing due praise upon the endeavours to train *midwives*, the question is raised as to the possibility of organising courses for the *old-style practitioners* just as old-style midwives are now taught. In Dr. Faber's opinion the time is not ripe for such ventures.

Due consideration should be taken of the demand for scientifically trained *dentists*. Schools for such might be attached to the National medical colleges, one also to the Nanking Hospital.

The need for special training in certain branches of *public health work* is once more emphasized.

In a very interesting paragraph dealing with Supervision and Registration, Dr. Faber considers it a drawback that the Ministry of Education has no technical adviser or expert in medical matters and discusses the different ways in which this difficulty could be overcome. One of them would be to appoint a permanent secretary to the Commission on Medical Education, who might carry out investigations in the country.

Dealing with the question of registration of old-style practitioners, Dr. Faber noted that a certain degree of disintegration and loss of confidence in the old Chinese medicine is unmistakably present. It is most curious to note attempts at creating a "New Chinese Medicine," as contemplated for instance by the leaders of the old-style Shanghai College of Medicine, founded in 1927. Yet, while stating that

it will be very difficult in any way to try to prevent the people of China using native Chinese doctors and as difficult—I think—to prevent a steady recruiting of new practitioners of this type—

their official recognition is nowhere recommended in Faber's report. He thus concludes:—

When an ever increasing number of Chinese physicians are educated and graduated on modern lines, it will more and more be understood by the population that there can be different kinds of doctors but only one science and art of medicine. I have the idea that this evolution would be hastened if the students in the medical colleges and special schools had to attend a course of medical history including the history of philosophy and the content of the old Chinese medicine—not for using the old methods but for better

understanding what they will have to compete with in their future practice. The best manner to combat the superstitions of the old Chinese medicine is to let them come out in the daylight. The modern Chinese doctor must know them as then only will he be able to overcome them and to educate the population in this respect(1426).

The National Commission on Medical Education definitely adopted in September 1931, the idea of a two-type medical school system as contemplated in Faber's report. Accordingly steps were taken to prepare curricula for (a) "University Grade" medical schools with a five-year course and a year of compulsory internship; (b) "Special" medical schools of 4 years' course after graduation from the science course of a senior middle school(1427). However, the adoption of the two types of medical schools was considered as a temporary measure only to meet the immediate demand, and endeavours were to be made to evolve by the establishment of an experimental "basic model medical school" a new type particularly adapted to conditions in China. Plans were also laid to experiment in the Hsiang-Yale Medical School in Changsha with a curriculum putting preventive medicine on an equal basis with curative medicine(1423).

Before continuing with a discussion of the activities of the Commission, mention should be made of the establishment of some new educational undertakings. The *Shantung Provincial Medical Special School* was established at Tsinanfu in 1932(1428), the *Yunnan University Special Medical School* at Yunnanfu in 1933(1429) and the *Kwangsi Medical College*, possessing the same status, in 1935 (1430). The *Army Medical College of Kwangtung Province* was opened in 1936 at an initial expense of one million dollars. This important institution, starting with a class of 60 students, has a professional staff of 34. Four special institutes (Pathology, Bacteriology, Pharmacology and Surgery) are in charge of German professors while the rest of the instructors are Chinese. Connected with the school is a hospital with 800 beds (for soldiers only). An interesting feature is that 40 female nurses are employed to supervise the male orderlies.

Dr. C. K. Chu, discussing the further work of the Commission on Medical Education(1431) stated that the reorganization had taken place to include nursing and midwifery education. A secretary had been appointed for each of these fields. The *revised curricula* for both

(1426) K. Faber, Report on Medical Schools in China. League of Nations Health Organisation, 1931; Chin. Med. Jl., 1935, p. 1062.

(1427) Regulations for such *Chuan Ke* Schools had been promulgated in June 1931 (Chin. Med. Jl., 1932, p. 837).

(1428) Chin. Med. Jl., 1935, p. 1025.

(1429) Ibid., p. 1033.

(1430) Grant, Chin. Med. Jl., 1935, p. 934.

(1431) Chin. Med. Jl., 1935, p. 827.

medical colleges and special schools had been carefully considered, the opinions of many experts having been obtained (1432). These curricula were finally promulgated on July 6, 1935.

The curriculum for *medical colleges* is for six years, emphasis being laid in the first year on general subjects and basic sciences, in the second and third years on preclinical subjects, in the fourth and fifth on clinical subjects, whilst the sixth year was devoted to internship:—

Year:	Subjects:	Hours			Total:	Grand Total:
		Lecture:	Practical:	Clinical:		
First	Principle of Kuomintang Party	36	—	—	36	1,158
	Chinese	108	—	—	108	
	Foreign Languages	270	—	—	270	
	Mathematics	72	—	—	72	
	Physics	100	200	—	300	
	Chemistry	85	255	—	340	
	Medical Corps Training	—	32	—	32	
Second	Biology	96	180	—	276	1,124
	Organic Chemistry	34	102	—	136	
	Anatomy	93	231	—	324	
	Histology	30	90	—	120	
	Embryology	16	48	—	64	
	Neuro-Anatomy	16	48	—	64	
	Biochemistry	27	81	—	108	
Third	Medical Corps Training	—	32	—	32	1,192
	Physiology	60	180	—	240	
	Biochemistry	33	99	—	132	
	Pharmacology	48	144	—	192	
	Bacteriology	64	136	—	200	
	Pathology	75	225	—	300	
	Parasitology	32	64	—	96	
Fourth	Medical Corps Training	—	32	—	32	1,076
	Physical Diagnosis	32	64	—	96	
	Clinical Diagnosis	32	64	—	96	
	General Medicine	80	—	150	230	
	Surgery	75	—	237	312	
	Tropical Medicine	60	—	—	60	
	Mental and Nervous Dis.	60	—	48	108	
	Paediatrics	34	—	42	76	
	Dermatology & Ven. Dis.	22	—	44	66	
	Radiology	16	16	—	32	
	Medicine	80	—	150	230	
	Surgery	25	—	79	104	
	Paediatrics	34	—	42	76	
	Dermatology & Ven. Dis.	18	—	36	54	
	Obstetrics & Gynaecol.	96	—	84	180	

(1432) See H. F. Wu & R. K. S. Lim, *Chin. Med. J.*, p. 847; C. C. Ch'en *ibid.*, p. 861; W. R. Morse, *ibid.*, p. 868.

Year:	Subjects:	Hours			Total:	Grand Total:
		Lecture:	Practical:	Clinical:		
Fifth	Public Health	80	—	128	208	1,132
	Ophthalmology	48	—	48	96	
	Oto-Rhino-Laryngology	32	—	42	74	
	Urology	16	—	24	40	
	Orthopaedics	32	—	6	38	
	Medical Jurisprudence	16	16	—	32	
Total		2,279	2,243	1,160	5,682	5,682
Medicine (including paediatrics, mental, skin and venereal diseases)					4½ months	
Surgery (including urology, orthopaedics, ophthalmology and oto-rhino-laryngology)					4½ months	
Sixth (Internship)	Obstetrics and Gynaecology				1	month
	Public Health (in Health Stations)				1	month
	Vacation				1	month
	Total				12	months

The curriculum for *medical special schools* is one of four years with devotion of the first two years to basic sciences and preclinical subjects and the last two years to clinical subjects. Though internship is not obligatory, the graduates are urged to serve for one year as internes immediately after graduation. Details of the curriculum are as follows:

Year:	Subjects:	Hours			Total:	Grand Total:
		Lecture:	Practical:	Clinical:		
First	Principles of Kuomintang Party	36	—	—	36	1,206
	Chinese	108	—	—	108	
	Foreign Languages	144	—	—	144	
	Mathematics	72	—	—	72	
	Biology	32	96	—	128	
	Chemistry	68	204	—	272	
	Physics	90	180	—	270	
	Physiology & Biochemistry	36	108	—	144	
	Medical Corps Training	—	32	—	32	
Second	Anatomy, Histology, Embryology, Neuro-anatomy	118	306	—	424	1,176
	Physiology & Biochemistry	36	108	—	144	
	Bacteriology and Parasitology	72	216	—	288	
	Pathology	72	216	—	288	
	Medical Corps Training	—	32	—	32	
	Pharmacology	36	108	—	144	
Third	Physical and Clinical Diagnosis, Intern. Med.	94	128	104	326	1,124
	Surgery	80	—	150	230	
	Paediatrics	64	—	88	152	
	Mental and Nervous Dis.	48	—	48	96	
	Skin and Venereal Dis.	48	—	64	112	
	Radiology	16	16	—	32	
	Medical Corps Training	—	32	—	32	

Year:	Subjects:	Hours			Total:	Grand Total:
		Lecture:	Practical:	Clinical:		
	Internal Medicine	94	—	232	326	
	Surgery	80	—	150	230	
	Obstetrics and Gynaecol.	96	—	84	180	
Fourth	Public Health	64	128	—	192	1,114
	Dis. of Eye, Ears, Nose and Throat	64	—	90	154	
	Medical Jurisprudence	16	16	—	32	
Total		1,780	1,702	1,188	4,620	4,620

It will be seen that the main difference between the two curricula lies in the number of hours given to the fundamental sciences, preclinical subjects and the internship year. Regarding the clinical subjects both curricula are practically identical.

Commenting upon these curricula the 1935 report of the Council of Education(1433) stated that they were tentative in nature. At the end of one year the teachers would be asked to comment freely on their experiences and a conference of the deans of the different schools would be convoked to make revisions.

The report of the Council also drew attention to new foundations and reorganisation of existing schools. In Nanking, under the deanship of Dr. S. N. Cheer, a new school was opened in 1935 as the *Medical Department of the National Central University*. The National Health Administration had started a school for the training of health officers and other public health workers. In Chinkiang, the *School of Public Health Administration* and in Chenju the *Institute of Legal Medicine* had been added to the list. The *Army Medical College* had been transferred to Nanking and thoroughly reorganized, the *Chekiang Provincial Medical School* reopened after a suspension of several years, the *Hopei Medical School* had been reorganized to be followed by the *Kiangsi Medical School*. The plans for the reorganization of the *Hsiang-Ya Medical College* had been followed up and had led to the calling of an informal conference at Nanking in 1935, the recommendations of which had been approved by the Commission on Medical Education(1430).

In this attempt to summarize and analyze the problem of medical education in China, mention may be made of (a) Statistics on medical schools in China for the year 1933-34 compiled by Lee T'ao, Peiping Union Medical College; (b) A compilation showing the number of graduates from medical schools in China up to summer 1934(1434).

(1433) Chin. Med. Jl., 1935, p. 1364.

(1434) Lee T'ao, *ibid.*, p. 894; J. Heng Liu, Chin. Year Book 1935-36, p. 1623.

STATISTICS ON MEDICAL SCHOOLS IN CHINA, 1933-1934

Statistics of Medical Colleges in China		Length of Course		No. of Teachers, Annual Expenses of Schools			
College	Location	Date of Es- tablishment	Medium of In- struction	Prema- dical Course	No. of Teachers	Expenses	
						Total Years	Salary Library & Wages Equipment
National Tung Chi Woosung, University, College of Medicine	Shanghai	1908	German	1 4 1 1 6	8 7 15	64,200	21,000
National Peiping Uni- versity, College of Medicine	Peiping	1912	Chinese	1 4 1 1 6	52 18 70	140,400	20,880
National Chung Shan University, College of Medicine	Canton	1926	Chinese & German	1 4 1 1 6	35	266,640	
National Shanghai Medical College*	Shanghai	1927	Chinese & English	1 4 1 1 6	45 12 57	152,016	33,917
Army Medical School	Nanking	1902	Chinese	4 0.5 4.5	18 16 34	84,000	150,924.00
Yunnan Army Me- dical School	Kuangming, Yunnan	1931	Chinese	0 4 or 3 4 or 3	11 11 22		14,400.00

* A fifth has been established in 1935 at the Central University, Nanking.
† May include expenses not specified here.

* A fifth has been established in 1935 at the Central University, Nanking.

† May include expenses not specified here.

Statistics of Medical Colleges in China			Length of Course		No. of Teachers, Annual Expenses of Schools							
College	Date of Es- tablishment	Medium of In- struction	Pre- medical Course	Medical Course	No. of Teachers						Expenses	
					Full Time	Part Time	Years	Half	Total	Salary	Library & Wages	Equipment
Chekiang Provincial Medical and Phar- maceutical School	1912	Chinese	4	1	5	12	13	30	52,400	36,096	98,806.00	
Honan University, Col- lege of Medicine	1928	Chinese	0.5	4.5	1	6	15	11	26		60,000.00	
Hopei Provincial Me- dical School	1916	Chinese	0.5	4.5	1	6	13	2	20	82,800	118,800.00	
Kiangsi Provincial Me- dical School	1921	Chinese	4	1	5	11	2	13	36,072	13,392	53,988.00	
Shantung Provincial Medical School	1932	Chinese	4	1	5	13	3	16	41,520	13,056	54,576.00	
Tung Lu Medical School	1933	Chinese	0	4	0	4	1	11	12		55,644.00	

† May include expenses not specified here.

Statistics of Medical Colleges in China		Length of Course		No. of Teachers		Annual Expenses of Schools		
College	Location	Date of Es- tablishment	Medium of In- struction	Pre- medical Course	Me- dical Course	Intern- ship	No. of Teachers Total Full Time	Expenses Salary Library & Wages Equipment
Aurora University, College of Medicine	Shanghai	1909	French	1	4	1	6	23
Cheoloo University, College of Medicine	Tsinan, Shantung	1909	Chinese & English					289,949.00
Hackett Medical Col- lege	Canton	1899	Chinese & English	1	4	1	6	20 26
Harbin Medical School	Harbin	1926	Chinese	0	4	0	4	1 22 23
Hsiang Ya Medical College	Changsha	1914	Chinese & English	1	4	1	6	19 2 21
Kwang Wah Medical College	Canton	1909	Chinese	0.5	4.5	1	6	11 8 19
Mukden Medical Col- lege	Mukden	1912	Chinese & English	2	4	1	7	30 3 33
Nantung University, College of Medicine	Nantung, Kiangsu	1912	Chinese	0.5	4.5	1	6	13 3 16
Peiping Union Medical College	Peiping	1906	English	3	4	1	8	151
Shanai Chwan-chih Medical School	Taiyuan, Shansi	1919	Chinese	4	1	1	5	12 4 16
								84,000
								108,000.00

† May include expenses not specified here.

Statistics of Medical Colleges in China			Length of Course		No. of Teachers, Annual Expenses of Schools								
College	Location	Date of Es- tablishment	Medium		Inter- ship	No. of Teachers			Expenses				
			Pre-me- dical	of In- struction		Years	Full Time	Half Time	Salary	Library & Equipment	†Total		
Sino-French Uni- versity, College of Me- dicine**	Peiping	1921	French	2	4	6							
St. John's University, College of Medicine	Shanghai	1906	English	2	4	1	7	18	12	30	85,980	100,584.00	
Tung Nan Medical School	Shanghai	1926	Chinese	1	4	1	6	18	8	26	60,072	2,496	156,000.00
Tung Teh Medical College	Shanghai	1918	Chinese	0.5	4.5	1	6	17	15	32	34,800	14,400	36,302.28
West China Union University, College of Medicine	Chengtu, Szechuen	1914	Chinese & English	2	4	1	7	31	14	45			186,492.00
Women's Christian Medical College	Shanghai	1924	English	2	4	1	7	20	13	33			48,000.00
Hongkong University, College of Medicine (British)	Hongkong	1912	English										
Manchuria Medical College (Japanese)	Mukden	1921	Japanese	0	4	0	4						

** Only premedical courses offered.

† May include expenses not specified here.

Number of Graduates from Medical Schools in China up to Summer, 1934

Army Medical College	843	National Medical Coll. Shanghai....	43
Aurora University	84	National Peiping University.....	581
Cheloo University	318	National Tungchi University.....	299
Chekiang Prov. Med. Coll.	492	Navy Medical College.....	218
Hackett Medical College.....	196	Peiping Union Medical College....	138
Hangchow Med. Training School..	140	Shansi Prov. Med. Coll.	70
Harvard Medical Coll. of Shanghai	4	Shantung Prov. Med. Coll.	108
Hopei University	62	Shantung Women's Med. Coll.	49
Hunan-Yale Medical School.....	52	St. John's University.....	130
Kiangsi Prov. Med. Coll.	150	Tatung Medical College.....	40
Kiangsu Prov. Med. Coll.	119	Tsingtao Medical School.....	14
Kwang Wah Medical College....	292	Tungnan Medical School.....	346
Manchuria Medical College.....	212	Tungshien Medical School Mukden..	288
Mukden Medical College.....	197	Tungteh Medical College.....	195
Nantung University	298	West China Union University....	30
Nanyang Medical School.....	202	Women's Christian Med. Coll.	19
Nanking University	22	Women's Union Med. School Peiping	56
National Chungshan University....	94	Yunnan Army Medical College....	87

TOTAL.....6,355

It is obvious that these figures do not show how many physicians are practising in China at present, even apart from the fact that graduates of foreign medical schools including that of Hongkong, are not considered. An attempt to study the present situation was made by Chu and Lai (1935) who were able to collect in 1935 data on 5,390 modern-trained physicians, representing undoubtedly the majority of members of the medical profession in China. Of these 4,638 (87 per cent) were Chinese, including 795 returned students, and the rest (537 or 13 per cent) foreigners.

As to *provincial* distribution, Kiangsu ranked first with 2,010 or 37.3 per cent, followed by Kwangtung (606 or 11.2 per cent), Hopei (387 or 7.2 per cent), Chekiang (350 or 6.5 per cent), Liaoning (352 or 6.5 per cent), Shantung (244 or 4.5 per cent), Kiangsi (85 or 1.6 per cent, Szechuen (71 or 1.3 per cent), Anhwei (63 or 1.2 per cent), Hunan (56 or 1 per cent).

On the basis of *one million population* Kiangsu had 60 physicians (i.e. one to every 16,978 people), while as a whole China has only 12 physicians (or one to every 81,976 inhabitants). However, the apparent concentration of physicians in Kiangsu province was chiefly due to the presence of two large cities, Shanghai and Nanking. Indeed it was found that physicians were congregated in a few large cities, 1,182 or 22 per cent being in Shanghai alone. Nanking and Canton are also crowded with physicians but in the former one-third of the population receives no medical attention whilst the latter may be said to have reached the saturation point of the number of physicians it can support under the present methods of practice with but a fraction of people cared for by modern-trained medical men or women.

It is clear that, to judge from European and American standards, the number of physicians *per capita* is grossly inadequate. At the same time one must wonder how far a mere increase in the number of medical graduates would really remedy the present situation unless this is accompanied by measures which would direct this increased supply of doctors into the proper channels. A most interesting analysis starting from the viewpoint of demand rather than from that of supply was made by C. C. Ch'en (1436).

Dr. Ch'en pointed out that China is an agricultural country, about 85 per cent of her population living in villages and small towns. On account of overpopulation the average holdings of the farmers are about five *mou* (or 5/6 of an acre), producing forty dollars annually. It is clear that under these circumstances only a minimal sum can be spared for medical relief and indeed it has been found that the farmer spends on an average thirty cents annually for this purpose. It is optimistic to expect that more than a half of this would be spent on modern scientific medicine.

If now 600 dollars per annum are computed as the minimum salary for a qualified physician, 5,000 people would have to contribute 12 cents *per capita* to keep him alive and an addition of at least 4-500 dollars per year would be necessary to equip him for active work. This would mean that 10,000 people are necessary to support a physician—a number which no practitioner could possibly care for. Hence a rural medical service is impossible without introduction of a system of *state medicine*.

Dr. Ch'en, while outlining a curriculum best suited for training of medical practitioners or rather health officers for such service, points at the same time to successful attempts to use auxiliary personnel for village work, as for instance in Tingsien where he works. He believes that the combination of such village health agents and of state medical officers would be the simplest means to introduce scientific medicine into the masses of the Chinese population.

Chu and Lai, summarizing the literature and the results of their own studies also stated that

most authorities regard State Medicine as the most logical thing for China under the existing economic status.

Dr. Yen, dealing at the Centenary Celebrations of the Canton Hospital on November 2, 1935, with "Medicine of the Future in China" (1437), expressed the conviction that modern medicine will stay and become indigenous in China. The great demand for more workers to carry on existing medical work and to undertake new enterprises clearly indicates this.

(1436) Chin. Med. Jl., 1935, p. 861.

(1437) Chin. Med. Jl., 1936, p. 155.

In meeting this demand care should be taken not to sacrifice quality for quantity, as the turning out of medical personnel with lower standards might retard rather than promote progress. Due attention should be paid therefore to the proper training of teachers for prospective medical schools, the better medical colleges serving as normal schools for this purpose. With this object in mind fellowships had been offered by the Commission on Medical Education to those desiring to prepare themselves as teachers in preclinical branches.

Similarly one should not go too far in shortening and simplifying the curriculum, though the teaching of special subjects might be restricted.

The most important question, however, is to provide a system of medical practice adapted to the peculiar needs of China. A system of State Medicine seemed the only solution presenting itself and this idea had been definitely adopted by the National Health Administration which thus outlined its national policy:—

"State Medicine is the only policy to effect medical protection for the mass of the population in an efficient manner and the objective of community protection through State Medicine necessitates an organized system of medical and public health services. For a unit of 5—10,000 population, there should be a rural sub-station to take care of simple medical and health work, and for every five or ten such sub-stations, there should be a district health station to render more fundamental health and medical services to the people. In a *hsien*, there should be a health centre which includes a hospital, a simple laboratory and an administrative organ for the supervision of medical and public health work under its jurisdiction. Similarly, a provincial health centre should be built on a larger scale to supervise and assist the different *hsien* centres and to take care of certain types of health work beyond the scope of a *hsien* administration. Above all these local organizations, there should be a national health organization to organize and supervise the medical and health work throughout the country. Under such a system it would eventually be possible to bring health protection to every individual of the population in the most logical and effective manner. To carry out efficiently this national policy, all available medical and public health institutions and services should be fully utilized and guided along the lines of the general policy mentioned above. It has been felt by those who are interested in social reconstruction work that during the past ten years, too many individual efforts for the different classes of social reconstruction have been carried out without regard to coordination. In the medical field, one cannot afford such lack of coordination."

In order to supply the personnel required for this scheme, the medical schools must be so reorganized as to train all types of workers. In Dr. Yen's opinion the bulk of this work would have to be done in the provincial schools, the practical training to be given in the provincial hospitals and laboratories as well as in the field centres in the *hsien* and rural areas. The schools taking care of this work ought to have under a Director four Deans:—

- (1) Dean of Medical Science (pre-medical and pre-clinical teaching);
- (2) Dean of Applied Medicine, acting concurrently as hospital superintendent (Medicine, Surgery, Obstetrics and Gynaecology, Specialties);

- (3) Dean of Social Medicine (Preventive Medicine, Public Health, Sociology and Psychology);
 (4) Dean of Technical Services (Nursing, Midwifery, Pharmacy, Laboratory technicians).

No fees would be charged for tuition but the students after graduation would be required to serve the Government institutions for a definite period of years.

Though in the foregoing pages repeated reference has been made to the training of various categories of auxiliary personnel, it is necessary to supplement this information.

Great attention is paid by the National Health Administration to the training of *public health workers*. Dr. J. Heng Liu, dealing with this matter in 1935(1438), mentioned the following special courses given by the Central Field Health Station:—

	No. of Classes:	No. of Gradu- ates: (July, 1935):	No. under training
Refresher Course f. Physicians....	2	42	0
Public Health Officers' Course.....	5	61	20
Internships and residencies.....	7	103	78
Postgraduate Course in Pharmacy..	1	0	5
Public Health Nurses' Course.....	3	65	41
Sanitary Engineers	—	14	7
Technicians(1439)	—	32	66
Sanitary Inspectors' Course.....	4	118	0
Health Education Course for School Teachers(1440)	4	119	0
TOTAL	26	604	217

Details in regard to some of these courses together with a general discussion of the subject were given by Dyer(1441):

The course for *medical officers of health* includes 50 hours of lectures, and 102 hours of field work.

The course for *sanitary engineers* lasts one year. The first six months include part of the course for medical officers, specialized laboratory training in water, sewage, and bacteriology, special reading and conferences, field practice in sewage plant operation, water plant operation, delousing, fumigation, well and latrine construction, surveying, designing and shop practice. For the last six months the students are sent to different parts of the country where work is in progress and act as assistants to the men in charge.

The course for *sanitary inspectors* consists of 108 hours class room work and 404 hours field work. The curriculum considers all branches of the work including minor construction, field sketching, some knowledge of agriculture, animal husbandry and veterinary medicine. During training these men must do the actual work so as to become competent in supervising others.

- (1438) Chin. Med. Jl., 1935, p. 942.—See also Chin. Year Book 1935-36, p. 1627.
 (1439) Details regarding a 2-year course for Hygienic Laboratory Technicians at the National Health Administration are given Chin. Med. Jl., 1936, p. 749.
 (1440) With the collaboration of the Division of Health Education, the College of Education of the National Central University at Nanking is giving a four-year course for the training of health teachers in schools (J. Heng Liu, Chin. Med. Jl., 1934, p. 73 and Chin. Year Book 1935-36, p. 1628).
 (1441) Chin. Med. Jl., 1936, p. 76.

The course in sanitation for *public health nurses* consists of 25 hours lecture and 19 hours field work. It is considered as too limited, as the nurses ought to have more practical experience and ought to be able to fill to some extent the duties of sanitary inspectors.

It is planned to educate in these courses well qualified personnel able to fill responsible posts and to train in their turn lower grade personnel.

In the spring of 1936 training was commenced of a group of 11 doctors and 25 nurses destined for work in the newly planned health administration of Fukien province. With their aid travelling clinics will be created, all the students pledging themselves to work in Fukien for at least two years (1442).

Baranoff, dealing with the problem of *dental education* in China (1443), pointed to the absence of government dental schools. He considered as the oldest private establishment the Harbin Dental School, founded and run by Russian practitioners and therefore attended by few Chinese only. A well equipped dental school with qualified American teachers existed for some years at the Methodist Hospital in Peiping, but closed in 1927 because of financial difficulties. A private dental college with a three-year course was opened in Shanghai in 1930 by a group of Chinese returned students. Thus the only institution providing university grade dental education was that organized in 1918 by the West China Union University, operating in full union with the medical faculty under the title of College of Medicine and Dentistry. The dental curriculum of the college called for seven years study, the first two years being largely taken up with courses in science and English; the following four years covered medico-dental subjects followed by one year of internship. The courses in all fundamental medical sciences were attended in common by both medical and dental students.

This lack of sufficient facilities for proper dental education has resulted in a condition in which most of the dental practitioners of China have been apprentice-trained in private offices. On the other hand the need for properly trained specialists becomes more and more urgent. Dental caries, previously said to be a rare disease amongst the Chinese, has increased very rapidly in recent years, diet deficiencies caused by civil war and famine as well as increased consumption of sugar being among the factors responsible. Other diseases of the mouth, especially *pyorrhoea alveolaris*, are rampant.

To cope with this situation many dentists are necessary, but these should be well trained, capable of participating in effective public health programs. Baranoff is of the opinion that in training these men, no profession separate from medicine should be created but close

(1442) Chin. Med. Jl., 1936, p. 749.

(1443) Ibid., 1932, p. 899.

cooperation should be maintained between medical and dental education.

A. W. Lindsay, in a Memorandum on "Dental Education and Practice in China" submitted in September 1935, also points to the need of organization of dental education which, while securing a sufficiently large dental personnel, should at the same time preserve the highest standards of medical science. A system of "State Dentistry" would presumably become necessary to cope with the situation.

Fortunately, only few vested interests exist in China to be considered in organizing dental organization and practice. At the same time it would be possible to avoid failures in dental legislation and organization as they have been made in other countries.

In establishing a system of dental practice, all the demands of an adequate health service ought to be considered and greatest stress should be laid upon proper scientific and biological training of dental practitioners. These ought to be assisted by dental technicians (three years' training) and dental nurses (with two years' training) but all of these should work in groups thus avoiding the mistake of some countries where dental practice becomes more and more mechanized in the hands of technicians practising autonomously.

In China also a large number of so-called western dental practitioners exists many of whom are not properly trained. Further additions to this class ought to be discontinued and measures taken to weed out the totally unfit and to train the best of the remainder. This could be accomplished by:

- (1) A survey of the unqualified dental practitioners;
- (2) Registration as (a) Dentist; (b) Qualified Dental Technician; (c) Unqualified Dental Technician and (d) Dental Nurse.
- (3) Examination before registration whenever necessary;
- (4) Requiring attendance at qualifying schools of all unqualified practitioners;
- (5) Requiring municipalities and rural districts to organize dental welfare clinics or to appoint supervisors of the private practice of dental technicians as a temporary measure.

The educational system should therefore provide for

- (1) University Dental Colleges;
- (2) Dental Technical Schools;
- (3) Temporary Qualifying Dental Technical Schools.

A survey of *Pharmacy Schools and Courses* in China was given by W. P. Pailing in the 1935 Educational Number of the Chinese Medical Journal (1444). Here it is pointed out that previously, owing to the lack of suitable teaching institutions, hospital dispensers were trained in their individual hospitals by doctors lacking the specific knowledge for such teaching. Within the last decade, however, several schools were opened to fill this gap. This following are enumerated:—

<i>Name & Locality:</i>	<i>Year of Foundat.</i>	<i>No. staff:</i>	<i>Curriculum:</i>	<i>No. graduates:</i>
Dept. of Pharmacy, Cheloo University, Tsinan	1929	4	2 yrs.	54
Pharmacy School of the Peiping Municipal Health Bureau	1927	4	2 yrs. (night classes)	150
Faculty of Pharmacy, Sino-French University, Shanghai	1929	18	4 yrs.	36
Dept. of Pharmacy, West China Union University, Chengtu	1932	11	4 yrs.	—

In addition to these regular schools practical training in pharmacy is given by some institutions, notably the Institute of Hospital Technology, Hankow (6 months' course) and the Hunan Yale Hospital, Changsha (3 years' training).

Turning to the *education of nurses* it should first be emphasized that continuous progress is being made in replacing the male nurses in the wards for men by female personnel. Interesting data were collected in this connection in a hospital survey published by Snell in 1934:

<i>Hospitals having:</i>	<i>Mission</i>	<i>Private</i>	<i>Government</i>	<i>Total</i>
Female nurses for male patients	67	25	9	101
No female nurses for male patients	55	10	1	66
Total reporting	122	35	10	167

Hence, whereas Balme in 1920 reported only 7 out of 189 hospitals where female nurses were on duty in wards for men, we find now 60 per cent of general, men's and special hospitals of Snell's series employing female nurses. Snell concludes that

with only 66 hospitals left where this is not practised and with many of the hospitals ceasing to receive male nurses it is very evident that this profession is for the women.

As has been stated in previous chapters of this History, the evolution of endeavours to train nurses has been similar to that obtaining in the case of pharmacists and dispensers. Whereas formerly nurses were trained in a more or less haphazard fashion for the needs of individual hospitals, gradually proper nursing schools were founded. Most of these have been mentioned earlier, but mention must be made here of the foundation, in 1932, of the *Central School of Nursing* in Nanking with a course of 3½ years, the last year being devoted exclusively to midwifery and public health nursing.

To coordinate the work, a *National Commission on Nursing Education* was founded at the end of 1934 which passed important re-

solutions on the minimum curriculum, registration of all nursing schools before June 1, 1936, and drew up a set of tentative regulations governing such schools(1445).

A list of nursing schools under medical colleges, as supplied in 1935 by Lee T'ao(1446) is herewith appended:—

	<i>Admission Requirements:</i>	<i>Length of Course:</i>	<i>No. of Students:</i>
Aurora University	Graduat. from Primary School	4 yrs.	20
Kiangsi Provinc. Med. School	Dto.	4 yrs.	14
National Chungshan University	Dto.	3-5 yrs.	40
Shansi Chwan-chih Med. School	Dto.	2 yrs.	44
Chekiang Provinc. Med. and Pharmac. School	Graduat. from Junior Middle School	3 yrs.	20
Hackett Medical College	Dto.	3 yrs.	58
Honan University	Dto.	3 yrs.	17
Hsiang-Ya Medical College	Dto.	3-5 yrs.	73
Kwang Wah Medical College	Dto.	4 yrs.	39
Manchuria Medical College	Dto.	2 yrs.	?
Mukden Medical College	Dto.	?	62
National Peiping University	Dto.	2	21
Tung Teh Medical College	Dto.	3	15
West China Union University	Dto.	4	?
Cheloo University	2 yrs. of Senior Middle School	4	66
Women's Christian Medical Coll.	Dto.	3	60
Peiping Union Medical College	2 yrs. in College	3	38

In addition to these well organized schools, training of nurses is carried out in the majority of hospitals in China. The following figures were submitted in this respect by Snell:—

<i>Hospitals reporting:</i>	<i>Mission:</i>	<i>Private:</i>	<i>Government:</i>	<i>Total:</i>
Training schools	115	18	6	139
Registered	90	8	1	99
Not registered	25	10	5	40
Male and female pupils	53	7	1	61
Male pupils only	10	—	—	10
Female pupils only	52	11	5	68
Having but no more admitting male pupils	11	—	—	11

In addition 14 hospitals did some unorganized work in training without possessing proper schools.

The *training of midwives* under Government auspices, inseparably connected with public health work and child welfare, has been dealt with in an earlier section of this chapter. Some new private enterprises may, however, be mentioned here:—

Following the temporary suspension of the Hunan-Yale College of Medicine at Changsha the *Hsiang-Ya School of Midwifery* was opened in spring 1928. It was registered with, and received grants from, the Hunan Government. A course of two years with Chinese instruc-

(1445) Snell, Chin. Med. Assoc. Special Report Series No. 1; J. Heng Liu, Chin. Year Book 1935-36, pp. 1628, 1629.

(1446) Chin. Med. Jl., 1935, p. 897.

tion was offered. Most of the text-books used were either compiled or translated by members of the Faculty with the aid of the new terminology, because of the lack of up-to-date or properly written texts(1447).

A midwifery training school was opened in 1933 in connection with St. Luke's Hospital at *Hinghwa*, Fukien(1448). At Hankow the Union Hospital and the Methodist General Hospital united in 1934 to form the *Hankow United School of Midwifery*(1449).

Reference has been made earlier in this chapter to a scheme to use part of the *British Boxer Indemnity Funds* for public health work and medical education. The plan finally adopted was to establish an endowment for the rehabilitation of railways and other constructive works in the form of loans, using the interest of 5 per cent on these loans for the subvention of educational and cultural enterprises. An educational sub-committee of the Board of Trustees was instituted, Dr. J. Heng Liu functioning as one of the members. The following grants were made in 1934 for medical purposes:—

- (a) The National Health Administration was awarded one professorial chair to be subsidized with \$10,000 annually for three years and \$60,000 for equipment purposes, payment to be made in three annual instalments of \$20,000.
- (b) The National Medical College of Shanghai was appropriated \$60,000 in three annual rates for construction purposes.
- (c) The Hsiang-Ya Medical College, Changsha, was similarly awarded \$60,000 for equipment expenses in connection with the Department of Public Health.
- (d) The Mukden Missionary Medical College was granted \$20,000 for equipment purposes.

In addition two scholarships for each of the years 1933 and 1934 were awarded to medical graduates for postgraduate studies for a period of three years in Great Britain(1450).

Postgraduate work in Great Britain was also promoted by the *Holt Scheme*, the firm of Messrs. Alfred Holt & Co. of Liverpool offering a number of free passages to and from England to suitable Chinese medical graduates. The candidates selected were expected to study in the first place at Liverpool University Medical School or Liverpool School of Tropical Medicine which in their turn granted them special facilities(1451).

Of great importance to medical research in China were the bequests of Mr. Henry Lester, a wealthy broker, who died on May 14, 1926.

He left a considerable sum (Tls. 1,000,000) to the Shantung Road Hospital, which forthwith assumed the name of the *Lester Chinese*

(1447) *China Med. Jl.*, 1929, p. 43.

(1448) *Chin. Med. Jl.*, 1935, p. 96.

(1449) *Ibid.*, p. 718.

(1450) *Chin. Med. Jl.*, 1934, p. 804, 1935, p. 277.

(1451) *Ibid.*, 1933, p. 220.

Hospital and was now able to carry out the cherished plan of the late Dr. Davenport to replace the old building by an up-to-date plant. In pursuance of this scheme, the hospital was transferred in 1928 under Dr. Davenport's successor, Dr. J. Lee H. Paterson, to a temporary building while the old building was pulled down and the erection of a new one was started. This new Lester Chinese Hospital, a thoroughly modern establishment with accommodation for 200 patients (gradually to be increased to 270) became ready for occupancy by Christmas, 1931.

St. Luke's received under Mr. Lester's will the amount of Tls. 200,000.

Still more promising is the work of the *Henry Lester Institute of Medical Research*, founded by the Lester Trust (to which Mr. Lester left his residual estate valued at 17 million taels) with Dr. H. G. Earle as Director and Dr. J. L. Maxwell in charge of Field Research. An address on the origin, nature and functions of this institute was read by Dr. Earle at the 1930 Conference of the National Medical Association at Shanghai. Here he pointed out that, according to the will of Mr. Lester, the Trustees are to be British subjects resident in Shanghai and that vacancies are to be filled by appointment of the Shanghai Municipal Council. He further explained why—though the will of Mr. Lester provided

for the establishment of an institute or institutes for the study of and the instruction in the English language in medical science, surgery.....and other useful and scientific knowledge.....

it seemed advisable to lay main stress upon research rather than upon instruction in medicine.

Describing the practical steps taken, Dr. Earle pointed out that temporary offices had been opened where the nucleus of a library was established and a beginning had been made towards appointing a small staff. A site had been purchased at 1320 Avenue Road and a building had been designed

in such a way as to cover a variety of requirements. Three main objects have been borne in mind,

(1) Medical research, (2) Teaching and (3) the provision of a medical centre for general purposes.....

On the research side, laboratory accommodation will be provided for that fundamental research which is so vital to medical progress, the accommodation being divided between large rooms for team research and individual units. Facilities will be available on a liberal scale for bacteriology, parasitology, experimental biology including physiology and pharmacology, biochemistry including nutrition, and applied human physiology, while certain central departments for histology, photographic and X-ray work will complete the equipment, necessary for all forms of medical research.

As already stated, it is not proposed that the Institute should be primarily a teaching institution: at the same time it has been realised that in the early days of its organisation, it may be required to conduct post-graduate courses, more particularly in relation to public health and tropical medicine.

Further it is felt that it would be of great advantage to the community if there could be established a medical library and museum which would have a sphere of usefulness outside the specific requirements of workers within the Institute, and that the provision of a medical centre where public lectures could be given and conferences held would meet a need not likely to be satisfied by other organisations.....

Finally arrangements have been entered into with the Trustees of the Lester Hospital whereby the Institute will become responsible for the cost and equipment of the fourth floor of the Hospital as a complete unit, including both wards and laboratories, for purposes of clinical investigations.

Sad to relate, Dr. John Anderson, since 1925 the first full-time Professor of Medicine at Hongkong University and, in January 1929, appointed to the Lester Institute, died after an operation for gall-stones on March 28, 1931.

Temporary laboratories were set up near the office where the work of the medical research institute was carried on during the year 1931. As mentioned, the staff of the institute under Drs. R. C. Robertson and Maxwell rendered excellent service during the 1931 flood on board of a hospital ship equipped with the help of the Lester trustees.

Towards the end of 1931 the laboratory was transferred to the Clinical Unit in the newly built Lester Chinese Hospital where work was continued until the splendid main laboratory in Avenue Road became available in late autumn of the year 1932.

The ground floor of the new Institute building houses the Directorate, the statistical department, the library under Dr. Maxwell and a large lecture hall which is liberally put at the disposal of medical societies. The first floor accommodates the Division of Physiological Sciences under Prof. B. E. Read where valuable research is undertaken, especially in regard to problems of nutrition and the properties of Chinese drugs. One wing is devoted to the Division of Clinical Sciences under Dr. H. Gordon Thompson; here as well as in the clinical unit in the Lester Chinese Hospital research work on internal diseases, especially on beri-beri and other diseases peculiar to the Far East as well as in experimental surgery is conducted. The Division of Pathological Sciences on the second floor under Dr. R. C. Robertson comprises departments of bacteriology, serology, pathology, parasitology and entomology and has successfully studied many problems, special stress being laid upon conditions frequent in Shanghai and its vicinity. Field work is carried out whenever possible, particularly in regard to parasitological and entomological problems. A well-equipped photographic laboratory is in charge of Mr. R. V. Dent(1452).

(1452) China Med. Jl., 1927, p. 589, 1928, p. 619; 1930 Directory of the Nat. Med. Assoc., Shanghai, p. 56; Earle, Nat. Med. Jl., 1930, p. 267; China Med. Jl., 1931, p. 382; Chin. Med. Jl., 1932, p. 1052; Annual Reports of the Henry Lester Institute 1933-35, *passim*.

For the purpose of modernizing medical legal procedure as well as training personnel for the practice of legal medicine, the Ministry of Judicial Administration planned in 1930 the establishment of an *Institute of Legal Medicine* at Chenju near Shanghai. Work was delayed as the result of the Sino-Japanese trouble but the institute was opened in August 1932. Being excellently equipped it has been able to deal with numerous medico-legal cases. In addition a postgraduate *training class* was organized in autumn of 1933 with an enrolment of 20 students most of whom had been delegated by various courts. Their work consisted of lecture and practical laboratory training for one year and assistant work to court physicians for six months; it also comprised work in psychiatry and attendance in the hospital for mental diseases (1453).

Turning to a survey of *hospital activities* mention must first be made of the *Central Hospital in Nanking*, opened in January 1930 with funds provided directly by the Central Government. Owing to the need of hastening the construction for use at first as a base hospital for wounded soldiers, a temporary structure consisting of 13 barracks was erected, the bulk of the material consisting of wood imported from America. The erection of a permanent hospital was greatly facilitated through the philanthropy and kind interest of Mr. Hu Wen-hu (Aw Boon-haw 胡文虎) of Singapore, who contributed \$375,000. The building of this new hospital, which has cost more than \$1,000,000 including equipment, was commenced in 1931 and completed in 1933. It is four storeys high, has 350 beds and is equipped with all modern scientific facilities for the practice of medicine and surgery. A whole floor is devoted to obstetric cases. It has been stated that, in addition to curative services given to thousands of patients, this splendid institution serves as an important training centre for medical and public health workers.

An *Isolation Hospital* was organized in Nanking in June 1932, under the joint auspices of the National Health Administration and the Municipal Government. 40 beds were provided for, a large part of the equipment being donated by citizens interested in medical relief work. 869 cases were treated during the first year with most gratifying results, the probable mortality (including serious cases leaving the hospital against advice of the doctors) being 6.2 per cent.

In February 1933, the Nanking Municipality opened an *Anti-Opium Hospital* with 150 beds, 120 of which were for free cases. A general free clinic was attached to this institution (1454).

(1453) G. Lynn, Report of the Institute, 1934; Chin. Med. Jl., 1935, p. 1174.

(1454) Chin. Med. Jl., 1932, pp. 90, 1126, 1140, 1933, p. 198; A Glimpse of China, compiled and published by the Executive and Science Committees of the 9th Congr., F. East. Assoc. Trop. Med., 1934, p. 74; 1933 Report of the Nanking Municipal Health Administration.

In *Shanghai* a number of useful medical institutions was opened in the year 1928. Chronologically, the first of these was the *Shanghai Sanitarium* on Rubicon Road, which owed its existence largely to the enthusiastic efforts of the late Dr. Wu Ting-fang and was founded by the Seventh Day Adventist Church, which also runs the famous sanitariums at Battle Creek, Washington and San Francisco, U.S.A.

The main building of the sanitarium had three storeys and was provided with accommodation for 50 patients in private rooms. All modern appliances for treating disease including massage, light therapy, electricity and hydro-therapy were provided for and a nurses training school connected with it. The doctor-in-charge, Dr. H. W. Miller, was assisted by a staff of five doctors and eight western-trained sisters.

As a result of its success, many became interested in securing a similar institution for the poor in the city. A sum of \$150,000 was subscribed for building operations and a valuable site in Range Road and further funds for equipment were obtained. The *Shanghai Sanitarium Clinic*, a six-storey building, was opened in 1930. It provides accommodation for 150 patients, mostly in wards, but partly in semi-private rooms available on a modest charge. The Clinic, which is operated under the direction of the Shanghai Sanitarium staff, cares for charity cases attended to by the regular staff and also for any paying patients who may choose their own doctors(1455).

An enterprising institution was the *Orthopaedic Hospital* establishment by Dr. New Way Sung and installed in a building on Zikawei Road. Dr. Annie P. A. Tseng was appointed Resident Surgeon, while Mrs. W. S. New assumed charge of the welfare work(1456).

When Dr. Gilbert Reid, the founder of the International Institute of China died in 1927, the Board of Trustees of the Institute, desiring to commemorate his life-long service in China, resolved to found a hospital in its building, the organizing work being entrusted to Dr. S. M. Chang. The *International Institute for Women and Children* was opened on November 27, 1928, with a capacity of 80 beds, most of them free or at a moderate charge(1457).

Having dealt already with the rebuilding of the Shantung Road Hospital, now called *Lester Chinese Hospital* to perpetuate the name of its benefactor, we may next mention the opening, in autumn of 1932, of the *Hua Lien Hospital*, established by the Joint Association of the Overseas Chinese in Medhurst Road. Free medicine to the poor was given at this charitable institution(1458).

(1455) 1930 Directory of the Nat. Med. Assoc., Shanghai, pp. 64, 66; Nat. Med. Jl., 1928, p. 258.

(1456) 1930 Directory of the Nat. Med. Assoc., Shanghai, p. 59; China Med. Jl., 1930, p. 281, 1931, p. 166.

(1457) 1930 Directory of the Nat. Med. Assoc., Shanghai, p. 54.

(1458) Chin. Med. Jl., 1932, p. 1141.

The *Child Welfare Clinic* in Chapei, Shanghai, one of the undertakings of the National Child Welfare Association discussed earlier, was inaugurated in April 1934. It was in charge of Dr. Grace Huang as full-time physician, assisted by a number of foreign specialists serving in a honorary capacity. Besides free medical treatment, given in 1935 to 12,344 patients, greatest emphasis is laid upon preventive and educational work (1459).

The opening, at the end of June 1935, of the *Mercy Hospital* at Minghong near Shanghai, an institution devoted to the treatment and care of patients with mental and nervous diseases, was due in the first place to the untiring efforts of Mr. Lo Pa-hong who procured the necessary funds both in China and in America. The hospital, situated in extensive grounds, consists of eight blocks with up-to-date equipment and is capable at present of accommodating 60 patients. It is headed by Dr. F. Halpern, Lecturer of Mental and Nervous Diseases in the National Medical College with which the new hospital is in close co-operation.

From a 1936 survey (1460) it can be gathered that there are over 50 municipal, public and private hospitals in Shanghai. The principal charitable hospitals for Chinese may be listed as follows:—

		No. of beds:
Chinese Red Cross Hospital	中國紅十字會醫院	338
Lester Chinese Hospital	仁濟醫院	230
St. Luke's Hospital for Chinese	同仁醫院	156
St. Elizabeth's Hospital	廣仁醫院	170
Margaret Williamson Hospital	婦孺醫院	250
Bethel Hospital	伯特利醫院	100
Shanghai Sanitarium Clinic	上海療養衛生院分院	150
Chinese Infectious Diseases Hospital	上海時疫醫院	200
Emergency Hospital	急救時疫醫院	200
St. Joseph Hospital	新普育堂南市醫院	80
Kwangtung Hospital	廣東醫院	150
Ch'ao-chou Hospital	潮州和濟醫院	15
Ningpo Hospital	四明醫院	170
Sacred Heart Hospital	聖心醫院	356
Summer Diseases Hospitals	時疫醫院	800
Total		3,365

A most gratifying event was the opening of a new block of the *Canton Missionary Hospital* in June 1935, erected at a cost of \$200,000. Half of this sum had been paid by the City Government in exchange for property which had been donated by His Excellency Mr. Sun Fo for a new hospital in 1923; \$50,000 came from a legacy by Mr. Frank Samson, an Australian Chinese who had been treated, years before, at the hospital. The balance was collected by members of the staff,

(1459) J. Tsu, Chin. Med. Jl., 1936, p. 608; *ibid.*, p. 637.

(1460) Wu Lien-teh, Nat. Quar. Serv. Rep., Series VI, 1935-6.

alumni and other friends besides substantial contributions from the Provincial Government and the Mayor of Canton(1461).

Dealing in chronological order with the foundation of hospitals and clinics in other regions of China, mention may first be made of the useful work of the *International League for the Prevention of Blindness in China* at Tientsin. It started in 1928 with two free eye clinics, increasing their number within the next four years to five. In addition inspection of factories was carried out in the city and booklets on common eye diseases written in plain Chinese, French and English were broadcast throughout China. As reported in 1932, the League had branches in 353 cities, situated in 23 provinces of China(1462).

At *Foochow* an union was effected in October 1928 between the missionary hospital for men and the Magaw Hospital for women, to which the Kate Woodhull Women's Hospital became affiliated(1463). Another foundation of the year 1928 was the opening of a dispensary for women and children by the Catholic Ursuline Sisters at *Pengpu* (蚌埠) Anhwei, while male patients were taken care of by one of the Jesuit Fathers(1464).

In the year 1929 a provincial hospital with a capacity of 200 beds was opened at *Chinkiang*(1465). A new building for the Mackenzie Memorial Hospital at *Tientsin* was erected under Dr. E. J. Stuckey(1466). At *Hongkong* a nursing home, founded by a group of practitioners in 1922, was turned in 1929 into the Yeung Wo Hospital. As can be gathered from a 1935 report this institution, superintended by Dr. Li Shu-fan, was carrying out a considerable amount of charity work, about 20 beds having been set aside for this purpose. A fine new hospital was erected in 1932 commanding an excellent view(1467).

A new building containing an operating suite and X-ray plant was erected in 1930 in connection with the American Presbyterian Hospital at *Hoihow* under Dr. N. Bercovitz and was named in honour of the pioneer medical missionary, H. M. McCandliss. At the same time plans were made for systematic leper work(1468).

The establishment of the up-to-date Jin Chi Hospital at *Ningpo* in 1932 under Chinese management was made possible by the generosity of Messrs. Tu Yueh-seng and King Ting-seng who donated \$500,000 for construction and equipment and over \$40,000 for yearly running expenses(1469). Another well equipped institution opened in 1932

(1461) Cadbury and Jones, l.c. p. 248.

(1462) Chin. Med. Jl., 1932, p. 623.

(1463) Ibid., 1936, p. 645.

(1464) Personal information from the Rev. Father Tissoni (Aug. 27, 1929).

(1465) 1930 Directory of the Nat. Med. Assoc., Med. Inst., p. 86.

(1466) China Med. Jl., 1930, p. 496.

(1467) Chin. Med. Jl., 1935, p. 192.

(1468) China Med. Jl., 1931, p. 466.

(1469) Chin. Med. Jl., 1932, p. 951.

was the Salvation Army Hospital at *Tinghsien*, Hopei, under Dr. A. Swain(1470).

A thoroughly modern 70-bed institution, called the Martyr Memorial Hospital, was opened under Dr. R. F. Craddock by the English Methodist Mission in 1933 at *Wutingfu*, Shantung(1471). Another interesting foundation during that year was the opening of a Lunatic Asylum at *Kaifeng*, established through the exertions of the Bureau of Public Safety and attached to the Relief House(1472).

Mention may be finally made of the opening of a Treatment Centre for Drug Addicts in *Peiping* in September, 1934(1473).

Seeing the endeavours made in the period under review to co-ordinate medical work it is not surprising to find that much attention has been paid to the collection and analysis of data on the hospitals throughout China so as to assess the present situation and serve as a guide to future policies. Surveys dealing with the missionary hospitals only were made in 1932 by Lennox(1474), in 1932 and 1933 by Maxwell(1475). A comprehensive table illustrating the conditions in 1934 was thus compiled by Dr. J. Heng Liu(1476):

<i>Province:</i>	<i>No. of Hosp.</i>	<i>No. of Physicians:</i>	<i>No. of Nurses:</i>	<i>No. of Beds:</i>
Kiangsu	91	571	1,032	7,205
Chekiang	73	238	440	3,524
Hopei	40	306	638	2,118
Shantung	33	170	262	2,438
Fukien	24	57	262	1,835
Kwangtung	23	131	329	1,859
Liaoning	22	163	278	1,607
Szechwan	17	53	179	1,063
Hupeh	17	88	202	1,459
Hunan	17	59	125	848
Shansi	16	49	108	967
Anhwei	16	49	115	556
Honan	8	37	74	782
Kiangsi	7	17	70	514
Kirin	7	14	20	170
Shensi	5	5	4	83
Kwangsi	5	12	48	293
Yunnan	3	7	9	88
Heilungkiang	1	2	6	60
Kansu	1	3	11	100
Total	426	2,086	4,212	27,553

(1470) *Ibid.*, p. 1142.

(1471) *Ibid.*, 1933, p. 196, 1935, p. 95.

(1472) *Ibid.*, 1933, p. 315.

(1473) *Ibid.*, 1934, p. 1092.

(1474) *Ibid.*, 1932, p. 484.

(1475) *Ibid.*, 1932, p. 820 and 1933, p. 694.

(1476) *Chin. Year Book* 1935-36, p. 1577.

A very valuable analysis of the hospital' situation in China, based upon records from 214 hospitals in 19 provinces was presented to the 1934 Conference of the Chinese Medical Association by the late Dr. Snell(1477). These data, obtained in addition to 150 missionary hospitals from 14 Government and 50 private institutions, showed most satisfactory progress as exemplified by a comparison with the findings of Balme in 1919:—

Balme's Findings, 1919:

Total value of 189 hospitals
\$6,464,780; average per hospital
\$36,916

11,900 beds in 189 hospitals

8 per cent have a pure water supply
and 6 per cent have it laid throughout
the hospital

25 per cent have flush closets

50 per cent seldom or never bathe
their patients

43 per cent have no laundry

37 per cent have no screening against
flies and mosquitoes; 67 per cent do
not have the kitchen screened

50 per cent have the diets under
control

45 per cent have iron beds

37 per cent possess no bedding

58 per cent do not have clothing

34 per cent do not possess a pressure
sterilizer for surgical goods

31 per cent do not possess a labora-
tory of any kind

82 per cent do not possess a bacterio-
logical incubator

87 per cent do not possess an X-ray
plant

Equipment for 189 hospitals valued
at \$850,761

Snell's Findings, 1933-34:

Total value of 214 hospitals
\$ 43,467,121; average per
hospital \$ 214,465. Ratio of
1 to 6.

16,930 beds in 214 hospitals.

42 to 50 per cent have the water
problem satisfactorily solved and
adequately piped into the hospital.
43 per cent have a good sanitary
arrangement.

76 per cent bathe on admission and
81 per cent bathe regularly.

80 per cent have their own laundry.

Only 9 per cent have no screening;
86 per cent have the kitchen
screened.

94.5 per cent have the food supply
under control.

83 per cent have standard hospital
beds. 80 per cent of all hospital
beds are standard.

90 per cent have adequate supply of
bedding.

27 per cent do not have clothing

Only 9 per cent have no pressure
sterilizer.

96 per cent have a clinical labora-
tory.

44 per cent do not have an incubator.

50 per cent possess an X-ray plant
and 43 more hospitals are planning
to have one.

Equipment valued at \$6,582,443; 7.7
fold greater; greater than entire
hospital valuation of 1919.

(1477) "An Enquiry into the Present Efficiency of Hospitals in China with Special Reference to Recent Growth", Chin. Med. Assoc. Special Report Series, No. 1.

Balme's Findings, 1919:

80 per cent have only one foreign-trained doctor

34 per cent have no nurse at all;
52 per cent have no foreign nurse;
60 per cent have no more than one graduate nurse

62 per cent have no regular system of night nursing

Snell's Findings, 1933-34:

136 hospitals have 299 foreign doctors. All the hospitals average 5 full time doctors each.

Only 10 hospitals (5 per cent) have no nurse. 104 hospitals have an average of 2.1 foreign nurses each. There is one graduate nurse for each 10 beds and one nurse, pupil or graduate, for 3.2 beds.

84 per cent have full 24 hours nursing care.

Snell, though far from being too optimistic, nevertheless expressed satisfaction at the great progress made since Balme's time. He was particularly pleased to note that the growth

has not been in numbers of hospitals or beds but rather from within the hospital: a marked increase in valuations, in equipment, in professional staff, in nurses; a great improvement in the laboratory and the amount of work done in it; an improvement in the quality of nursing and training of nurses; and a very great improvement in the keeping of records.

There is no doubt that, as compared with other countries, the number of hospitals in China is small. Lennox (1473), computing their number at 500, pointed out that thus the number of people per hospital is 800,000 in China as against 42,700 in India, 33,500 in Japan and 18,171 in the United States. In spite of this apparent need for more hospitals we see fortunately no tendency to sacrifice quality for quantity; on the contrary every possible endeavour is made to render the hospitals which do exist or are being founded, veritable centres of modern medicine. It is no less gratifying to note that although the need for efficient hospitals is recognized, the vital problem of providing adequate clinics combined with health stations, so fundamental to the campaign for better health of the masses, has not been overlooked. We have already shown that both the Government and private organizations are fully alive to this urgent aspect of the situation. It is our opinion that the future of modern medicine in this country rests more than anything else upon a proper balancing of the various weapons available in the prevention and cure of disease.

CHAPTER XV

GENERAL SURVEY AND OUTLOOK

Our long task has now come to an end. In the course of our narrative we have attempted to render as accurate and homogeneous a picture as possible of medical conditions in China from the first entry of foreign practice up to the present day. The results have necessarily not been quite harmonious, for considerable gaps appear in the earlier part of our history. Looking back upon the remote past, like a traveller casting a last glance from a high peak upon the vast country behind him, we could behold only prominent landmarks whereas many fertile fields in between could not be viewed with the same accuracy. On the other hand, approaching the present century, a dense forest of bewildering details was encountered, making it most difficult to allocate to events their relative merits. While asking the indulgence of our readers for these inevitable shortcomings, we shall in the next few pages try to supplement our chronicle with a critical survey of events outlined in the foregoing chapters and their bearing upon the future.

In our records we have laid stress upon the fact that what is commonly but incorrectly called *Western Medicine* was first introduced into China by European practitioners, particularly the Jesuit Fathers. While conferring much benefit upon the sick, at dispensaries and lazarets, they failed to grasp the opportunity offered to establish proper hospitals and medical schools, where a new generation of scientific doctors, as distinct from the old-style empiricists, could be trained. For instance, soon after K'ang Hsi's marvellous cure with cinchona bark by Fathers Gerbillon and Pereyra, the emperor was ready to adopt Christianity for himself and his whole empire. The great ruler would have been even more ready to afford every facility for propagating the new medical doctrine. The opportunity passed never to recur.

Then came Surgeons of the East India Company, headed by Pearson and Livingstone, who definitely implanted the seeds of modern medicine (and with it public health through vaccination), and opened the road for Protestant missionary pioneers, firstly to win the confidence of the Southern Chinese through successful practice, and secondly to lay the foundation for sound medical education in China.

The efforts of these early pioneers were augmented by the labours of successive generations of farseeing men and women, who devoted their lives, not only to propagation of the Gospel, but to developing the highest interests of medicine. As a result, numerous hospitals for the sick, medical schools for students and training institutions for nurses sprang up one after the other. Though these were not all of the same grade, they undoubtedly served the needs of the time. And to their everlasting credit be it said that, with a few exceptions, the Chinese leaders of the last and of the present century have obtained their first insight into the benefits of modern medicine at Christian institutions or through Christian influence. We need only mention in this connection such names as Kwan Ato, Wong Fun, Sir Kai Ho Kai, Yamei Kin, Hū King-eng, Mary Stone, Ida Kahn, Lim Boon-keng, H. J. Shu (Suvoong), Voonping Yui, E. S. Tyau, T. K. M. Siao, F. C. Yen, Arthur W. Woo, the New Brothers, etc.

From individual schools with inadequate staff and equipment, the next stage was reached in the foundation of Union Medical Colleges—again by missionary organizations—at such strategic centres as Peking, Tsinanfu, Shanghai, Hankow, Soochow, Chengtu, etc., with more trained teachers and better equipment. Some of these union medical colleges have now been closed, but their achievements are none the less worthy of remembrance.

Side by side with the above undertakings Chinese workers founded institutions of their own which, though often hampered by lack of funds and want of continuity, have done creditable service to the country at large. The appearance of bubonic plague at Newchwang in 1899 led to the creation of a local sanitary service under the progressive English-speaking Taotai Chow (later the Hon. Sir Shou-son Chow) who had been educated in Hongkong. Soon afterwards (1902) the Peiyang Sanitary Service was founded with Dr. W. T. Watt (Ts'u Yung-chiu 屈永秋) as Director while the reappearance of the dread disease in 1908 at the coal-mining centre of Tangshan led to a further strengthening of the sanitary defences of Chihli Province. Thirdly, the disastrous pneumonic plague of North Manchuria (1910-11) which originated in Siberia, traversed Manchouli, Hailar, Tsitsihar to Harbin and thence penetrated almost every big city of North and South Manchuria, invaded Tientsin, Peking, Chefoo, Tsinanfu, and other parts of China, culminated in the holding of an International Plague Conference in April 1911 in Mukden—a historic event—with a Chinese graduate of Cambridge as president, and in the subsequent establishment of the Manchurian Plague Prevention Service. The unique work accomplished for almost 20 years directly and indirectly by this or-

ganization in the domain of prevention, public health and microbiological research is known to the world. The Manchurian outbreak also paved the way for the Maritime Customs to appoint Port Health Officers at important ports and to enforce suitable quarantine regulations against the introduction of epidemic diseases. This task was kept up by the Customs until the National Quarantine Service took it over in 1930. The 1917-18 Shansi plague led to the establishment of the Central Epidemic Prevention Bureau at Peking, whose steadily increasing output of excellent biological products plays an important role in the fight against infectious diseases in China.

The reorganization of the Peking Union Medical College in 1915 (at first with a Board of foreign Trustees confined to appointees of the Rockefeller Foundation and of missionary organizations but since 1928 controlled by a new China Medical Board where the Chinese are in the majority) certainly ushered in a new epoch in the medical history of China. The original intention of the founders was to establish two high-class institutions—a northern one in Peking and a southern one in Shanghai. Unfortunately, owing partly to the high value of Chinese dollars as compared with gold dollars at the time of construction, partly to transplanting of purely foreign ideas and methods without adequate adaptation, and partly to undue emphasis being laid upon exteriors, a vast sum was spent upon the Peking College, so much so that before long it was decided by the Trustees to give up the idea of a Shanghai institution, although a large valuable piece of land had already been purchased for the purpose. Fortunately, thanks to the persistent efforts of Dr. F. C. Yen (Yen Fu-ching 顏福慶) this valuable lot was presented to a Board of Trustees representing the Shanghai Medical Centre, under the chairmanship of Dr. H. H. Kung (孔祥熙), Minister of Finance in the National Government. As a result a series of up-to-date buildings have been constructed at Feng-ling-chiao on Chinese territory adjoining the French Concession to house completely equipped medical, dental and nursing schools, including a hospital with 500-bed capacity.

In the address delivered at the inauguration of the Peiping Union Medical College buildings in 1921, Mr. John D. Rockefeller, Jr., said that

- (a) "in order that the College may serve to stimulate the development by the Chinese people of similar institutions it is essential that the current cost of operation should always be kept on a conservative level;" and
- (b) "we must look forward to the day, when most, if not all of the positions on the Faculty of the College will be held by Chinese."

Within recent years, especially since the advent of the National Government in 1926, a welcome change has been witnessed in the relations between Chinese and foreign leaders. Missionary colleges and hospitals are now ready to adjust their policy so far as to elect

a Chinese president or director on the board of management, to appoint more Chinese members to the higher staff, to register under Chinese laws and to adapt themselves more freely to Chinese conditions, so that the maximum of results may be obtained with a minimum of expense. A promising sign that the long-due efforts at unification are at last crowned with success is the amalgamation of the China Medical Journal (formerly edited by Dr. J. L. Maxwell) and the National Medical Journal, edited for years by Dr. Wu Lien-teh and managed by Dr. Lin Chung-yang (C. E. Lim 林宗揚), which commenced to appear on January 1, 1932 as the *Chinese Medical Journal*.

Furthermore, the union of the China Medical Association (formerly China Medical Missionary Association) with the National Medical Association into one joint *Chinese Medical Association* with headquarters in Shanghai was accomplished in April 1932. A spacious building had been bought and renovated at Avenue Road, Shanghai, in 1931 by the National Medical Association for the purpose. Recently, in 1936, additional space was made available for the increasing activities of the new Association through the purchase of adjacent lots.

Lastly, with the steady and powerful co-operation of the League of Nations, whose Health Director (Dr. L. Rajchman) and others of its staff have visited China on frequent occasions (some staying for two or more years) the National Government has resolved to carry out a policy of intensive medical progress supported by regular appropriations from the Ministry of Finance. The inauguration of the Ministry of Health in 1928 with Mr. Hsueh Tu-pi as Minister and Dr. J. Heng Liu as Vice-Minister was indeed a landmark in the annals of Chinese medicine. Its change of name two years later to the National Health Administration under the Ministry of Interior (but later put under the direct jurisdiction of the Executive Yuan) was but a political adjustment for its widespread activities have since been enhanced rather than diminished, co-ordinated instead of dissipated. Witness the steady development of the Central Field Health Station (Nanking), Central Hygienic Laboratory (Shanghai), nursing schools, dental colleges, the publication of a comprehensive and up-to-date Chinese pharmacopoeia, the establishment of the National Quarantine Service with branches at important ports, the Northwest Epidemic Prevention Bureau at Lanchow, the Mongolian-Suiyuan Epidemic Prevention Bureau, etc.

One of the most significant present-day trends is the great attention that is being paid to the welfare of rural communities as contrasted with urban dwellers. Particularly is this "decentraliza-

tion" of medical services urgent in a country like China in which almost ninety per cent of the population is rural.

The authorities realize that more and more emphasis should be laid upon the extension of modern health facilities to agrarian communities if the whole population is to benefit from the wide-scale efforts at health reconstruction that have been planned. The problem is not so much to attract attention to established centres in the large cities as to bring the benefits of modern medicine right into the homes of those who are either unwilling or unable to seek assistance in concentrated areas of population. Within a period of five or six years fifty *hsien* (county) health centres, 53 health stations and 59 health clinics have been established in the provinces of Chekiang, Chinghai, Hunan, Kansu, Kiangsi, Kiangsu, Ninghsia, Shensi, Anhui and Chekiang.

Of late years, the National Health Administration has rightly devoted ever increasing attention to the prevention as well as to the cure of disease. It is felt that a very appreciable proportion of the morbidity and mortality statistics is the result of preventable diseases. Conditions like syphilis, malaria, trachoma, ophthalmia, schistosomiasis, cholera, smallpox and plague, which yearly extract a huge toll in lives and economic usefulness are, in the light of modern scientific knowledge, preventable if concerted measures are adopted hand in hand with an awakening of health consciousness among the masses. Since 1930 the National Health Administration has been engaged in campaigns against plague in Fukien, Shansi, Shensi and Suiyuan; cholera in Shanghai, Nanking and other Yangtze cities; malaria in Nanking, kala-azar in Tsingkiangpu; schistosomiasis and other parasitological diseases in Chekiang; meningitis in Chekiang and Kiangsu; and relapsing fever in Hsuehchowfu. Extensive epidemiological surveys were conducted, including dysentery in Kiangsi, and malaria in Kweichow, Kwangsi, Yunnan, Kiangsi and Fukien.

When we review the comparative speed with which a handful of keen pioneers was able to plant a flourishing work among a people said to be the most conservative in the world, when we further witness how this tree of knowledge planted by them has since steadily grown, weathering every kind of storm and tribulation, we can face the future with confidence. While great endeavours are made to train as many medical men and women as possible, at the same time ever increasing emphasis is being laid to imbue future doctors with a spirit of idealism and devotion to public service. The labours of these men and women, encouraged by a progressive Government as well as by a sympathetic community, are bound therefore to lead to concrete results along the lines of state medical services. Though

the country has frequently been the scene of turmoil and natural catastrophes, it may be maintained that the minds of old-fashioned Chinese have actually been opened to modern ways of thinking and action by these very disturbances.

As in commerce, so in habits and the general activities of life, a new China has arisen which is awake to the benefits of modern standards of living and to the necessity of discarding age-long superstitions. The *New Medicine* has benefited by these reactions as can be judged by several examples. Old and historic city walls have been torn down to make way for wide macadamised streets, along which tall and imposing buildings have been erected, thus permitting the city inhabitants (who used to live in dark, narrow, squalid alleys) to enjoy fresh air and sunshine. Where no city walls previously existed, new areas have been reclaimed and graves dug up in order that new towns may be built containing wide roads, public parks, airy houses and potable water supplies. Such radical changes can be seen any day in Nanking, Greater Shanghai, Amoy, Swatow, Canton, Tientsin, Foochow, Kiukiang, Tsinan and as far in the interior as Taiyuan, Chungking, Sianfu, Changsha, Nanning, Nanchang and Lanchow.

Side by side with these modern installations are city hospitals controlled by Chinese physicians, where the patients are treated according to modern and rational methods. Even in the army, whose medical officers have not always been recruited from the best colleges, considerable improvements have been effected. For instance, many divisions now have well-equipped medical units with able surgeons and X-ray specialists in charge. Before a battalion marches nowadays to battle, it is a regular custom for the soldiers to ask for preventive inoculation against cholera, dysentery and typhoid, if such action has not already been taken by the medical officers. Recent statistics reveal the pleasing fact that typhoid incidence in the army has greatly decreased in contradistinction to the state of affairs among the civilian population. And in the recent cholera campaigns in Shanghai with a population of nearly 4 millions, hundreds of thousands have been vaccinated against the scourge each year. Both educated and uneducated, town and junk dwellers, factory employees and clerks, and even unsuspecting passengers on board steamers plying between Ningpo and Shanghai, now willingly submit themselves to this new method of preventing infection.

A new spirit has indeed arisen among all classes of China from the highest to the lowest, from the prosperous merchant to the humble tiller of the soil. Assuredly the next decade will witness more progress than ever.

APPENDIX

CHRONOLOGICAL TABLE

NOTE.

I. In this table are embodied:—

- (1) The more important events discussed in the text.
- (2) Certain data not mentioned in the text.
- (3) Available information on epidemics, no claim being made for its completeness.

II. From the year 1866 onwards the data are grouped under four headings, thus:—

- A. Outstanding events; public health activities.
- B. Educational endeavours and medical publications.
- C. Hospitals and related activities.
- D. Epidemics.

- | | |
|----------|---|
| 1803. | Parcel of smallpox vaccine (non-potent) received in Canton. |
| 1804. | Peter Parker, first medical missionary to China, born. |
| 1805. | Smallpox vaccination successfully introduced nine years after its discovery. |
| | Tract on vaccination published. |
| | Vaccination practised among Mongols. |
| 1805-06. | Smallpox epidemic in Kwangtung Province. |
| 1806. | Yao Hochun learns the art of vaccination from Dr. Pearson. |
| 1807. | Rev. R. Morrison arrives as first Protestant Missionary in China. |
| 1808. | Dr. J. Livingstone, surgeon to the East India Co., arrives in China. |
| 1809. | Rev. Morrison joins the East India Co. |
| 1811. | Smallpox outbreak in Ningpo. |
| 1812. | Missionary Doctor Warner from Otaheite spends one season at Macao. |
| 1815. | Vaccination Institute established by Hong merchants at Canton. |
| 1816. | Dr. Pearson submits report to the National Vaccine Establishment. |
| 1817. | Chinese tract on Vaccination published. |
| | Cholera reaches the confines of China by the land route from India. |
| 1818. | Treatise on Vaccination published by Yao Hochun. |
| | Yau Yamteng, his son, begins to practise. |
| 1819. | Cholera reaches the Straits Settlements. |
| 1820. | Dispensary for Chinese opened at Macao by Dr. Livingstone and Rev. Morrison. |
| | Russian doctors start with vaccination at Peking. |
| | Cholera invades China via the sea route from Burma and Bangkok, reaching Canton and then Wenchow, Ningpo and the Yangtse valley. |
| 1820-21. | Smallpox unusually severe in Kwangtung Province. |
| 1821. | Dr. Pearson's second report published. |
| | Cholera continues to be rampant, reaching Peking and Shantung Province in the North. Mrs. Mary Morrison succumbs to the disease at Macao. |
| 1822-24. | Cholera outbreaks in Peking, Central and Northern China and in Chinese Tartary. |

1823. Rev. Morrison goes on furlough.
1825. Question of a hospital for foreign sailors ventilated.
1826. Dr. Colledge joins the East India Co. in China.
Cholera again borne from India to China; reaching Peking once more and steadily advancing, it crosses the Chinese wall, sweeps through Mongolia, and eventually travels to Moscow.
1827. Dr. Colledge commences work for Chinese at Macao.
Cholera in Chinese Tartary.
1828. Colledge's work enlarged leading to the opening of an Ophthalmic Hospital.
Dispensary for Chinese opened at Canton by Drs. Colledge and Bradford.
Vaccination successfully introduced into Peking.
1829. Dr. Livingstone dies at sea while returning to China from furlough.
1830. Missionaries Bridgman and Abeel arrive in China.
1831. Missionary Gützlaff reaches China and undertakes his first journey northwards.
1832. Departure of Dr. Pearson necessitates closing of the Ophthalmic Hospital.
1834. Dr. Peter Parker, first medical missionary, arrives in China, soon leaving for Singapore.
Death of Rev. Morrison.
Practical Benevolent Society at Ningpo founded.
Account of the Ophthalmic Hospital published by "A Philanthropist."
'Pestilence' at Ningpo.
Smallpox epidemic in Kiangsu Province.
1835. Dr. Parker opens Ophthalmic Hospital at Canton.
British Seaman's Hospital Society in China founded.
Death of Sir A. Ljungstedt (Philanthropist).
Cholera at Canton.
'Pestilence' at Ningpo.
1836. Dr. Parker secures the services of Kwan Ato as medical assistant.
First amputation performed in Canton Hospital.
Suggestions for the formation of a Medical Missionary Society published by Drs. Colledge and Parker together with the Missionary Bridgman.
Pamphlet published by Colledge recommending the sending of medical missionaries to China.
Mr. H. Holgate assumes charge of British Seaman's Hospital at Whampoa.
1837. Dr. Parker begins the medical education of Kwan Ato and two other pupils.
Dr. Parker, during a voyage to Japan, introduces vaccination in the Loochoo Islands.
1838. Medical Missionary Society in China founded.
Dr. Parker goes temporarily to Macao where he opens a hospital.
1839. Medical Missionaries Lockhart, Hobson and Diver arrive. The first takes charge of the Macao Hospital but leaves in August for Batavia.
Canton Hospital closed on account of troubles leading to the first Anglo-Chinese war.
1840. Dr. Parker leaves, accompanied by his pupil Atsung, for America and England.
Dr. Lockhart returns to Macao but soon goes to Chusan to begin medical work.
Rev. (later Bishop) Boone, M.D., arrives in China.
Dr. Diver retires home, the work of the Macao hospital being carried on by Dr. Hobson.
The combined European and Native army sent from India to China imports cholera which invades Peking and follows the caravan routes into Russia.
1841. Medical Missionary Dyer Ball arriving.
Dr. Lockhart returns from Chusan to Macao.

- Dr. Parker reaches England where he publishes a "Statement respecting Hospitals in China" and preaches the cause of medical missionary work.
Malignant cholera at Ningpo.
"Letter addressed to the Chinese at Malacca on the subject of Cholera" published by Dr. Jas. Legge.
1842. Dr. Parker returns and reopens the Canton Hospital.
Missionaries Boone and Abeel go to Amoy followed by Dr. W. H. Cumming, who begins medical work at Kulangsu (continuing until 1847).
Dr. Lockhart goes to Hongkong where he supervises building of the missionary hospital.
Cholera cases among expeditionary troops taking Chinkiang.
1843. Medical work at Ningpo commenced by Dr. D. J. Macgowan (for three months only).
Dr. Jas. C. Hepburn begins work together with Dr. Cumming.
Dr. Lockhart resumes work at Chusan (-1844).
Committee of Public Health and Cleanliness appointed at Hongkong.
Missionary hospital opened at Hongkong under Dr. Hobson (Macao hospital having been closed).
Dr. Dyer Ball opens dispensary at Hongkong.
Seaman's Hospital established at Hongkong.
First missionary conference held at Hongkong, Dr. Hobson taking part.
Deaths recorded of Hong merchant Howqua, Mr. W. Jardine and John R. Morrison, Recording Secretary of the Medical Missionary Society.
Cholera reported at Amoy.
Outbreak of "Hongkong Fever".
1844. Chinese Government signs treaties with United States and France containing a Toleration Clause providing for the establishment of hospitals, churches, etc.
Dr. Lockhart commences hospital work at Shanghai.
Chinese Establishment for Gratuitous Medical Relief (She-e-kung-keuh) opened at Shanghai.
Dr. D. B. McCartee opens dispensary at Ningpo (continuing to work until 1872).
Missionary hospital in Amoy proper opened.
Dr. Parker performs first operation for bladder stone.
Rev. T. T. Devan, M.D., runs short-lived dispensary at Hongkong.
Ordinance for "Preservation of Good Order and Cleanliness within the Colony of Hongkong" promulgated.
Rev. A. P. Happer, M.D., arrives at Macao.
Patrick Manson born.
1845. Differences in the Medical Missionary Society lead to the existence of two separate associations at Canton and Hongkong.
Foundation of short-lived China Medical and Chirurgical Society at Hongkong.
Vaccination introduced into Shanghai.
Dispensary opened at Canton by Dr. Devan.
Dr. Macgowan resumes work at Ningpo.
Rev. Wm. Speer, M.D., arrives at Macao.
Dr. Dyer Ball removes to Canton.
Mr. Syle of the Church Missionary Society opens a workshop for blind adults at Shanghai.
1846. Better accommodation for Lockhart's Chinese Hospital at Shanghai procured.
Dr. Parker's book on "Surgical Practice amongst the Chinese" appears.
Medical Missionary Dr. Bettelheim begins work in the Loo-choo Islands (retiring in 1855 or 1856).
Two cholera cases found by Lockhart in Shanghai.

1847. Ether anaesthesia (first applied in America in 1846) adopted at Canton.
 Dr. Parker severs connection with the American Board of Commissioners for Foreign Missions.
 Rev. Moses C. White commences medical work on a small scale at Foochow.
 German Missionaries Genaehr and Kuester begin work in Kwangtung Province, including the distribution of medicines.
 Drs. Happer and Speer removing to Canton.
 Dr. Devan publishes "Beginner's First Book in the Chinese Language," containing lists of medical terms and phrases.
 Yau Yamteng sent to Peking to revive interest in vaccination.
 Orphanage work of Catholics at Shanghai commenced.
1848. Chloroform narcosis (first applied by Simpson in 1847) adopted at Canton.
 Dr. Hobson opens Kam-li-fau Hospital at Canton.
 Dr. Dyer Ball commences dispensary work at Canton.
 Dr. H. J. Hirschberg takes charge of Hongkong Missionary Hospital.
 Dr. Jas. Hyslop commences work at Amoy.
 Rev. Chas. Taylor, M.D., begins work at Shanghai.
 Rev. White opens dispensary at Foochow.
 Missionary W. Lobscheid arrives.
 Measles pandemic in the Pacific regions.
 Cholera cases fairly frequent at Shanghai.
1849. Dr. Lockhart opens dispensary inside the city of Shanghai.
 Temporary Catholic Hospital at Shanghai.
 Cholera deaths at Canton recorded by Dr. Hobson.
 Bilious remittent fever at Shanghai.
1850. Hobson publishes "Outline of Anatomy and Physiology" in Chinese.
 Work on anatomy and practical medicine published by Wang Ch'ing-jen.
 Autopsies performed at Canton.
 Rev. Wm. Welton, M.R.C.S., begins work at Foochow.
 Dr. Jas. H. Young opens dispensary at Amoy.
 Catholic Pharmacy at Wuchang opened.
 Death of Yau Yamteng.
 Cholera reported from Hainan, Canton and Ichang.
 Outbreak at Canton, variously considered at the time as cholera, bilious fever and even plague.
1851. Dr. Happer opens dispensary at Canton.
 Dr. (afterwards Bishop) I.W. Wiley takes over the Rev. White's dispensary at Foochow.
 Chinese Ts'z I Hospital founded at Hongkong.
 Death of Missionary Gützlaff and Mr. Olyphant.
 Cholera at Ningpo.
1852. Vaccine Institute at Canton re-established.
 Dr. Happer opens second dispensary in Southern suburbs of Canton.
 Dr. G. W. Burton of the Southern Baptist Convention works for a short time at Shanghai.
 Death of Painter Chinnery.
1853. Dr. Hirschberg commences work at Amoy.
 Dr. Wong Fun graduates at Edinburgh.
 Temporary Catholic hospital at Shanghai.
1854. Dr. John G. Kerr of the American Presbyterian Mission arrives at Canton.
 Dispensary of the Berlin Missionary Society at Phu-lu-wui opened.
 Dr. Hobson successfully employs chaulmoogra oil in leprosy.
 Arrival at Shanghai of medical missionaries Jas. Hudson Taylor, G. W. Burton (returning to work until 1861), D. C. Kelley and W. Parker.
 Death of Dr. Parker's Chief Dispenser Wang Asui after 12 years service.

1855. Dr. Kerr takes charge of the Canton Missionary hospital, Dr. Parker going to America.
Dr. Lobscheid publishes treatise on vaccination.
Temporary hospital for wounded militia opened by a pupil of Hobson in Kwangtung Province.
Dr. Wm. Parker goes to Ningpo, working until 1859.
Rev. H. Goecking, M.D. takes over Phu-lu-wui dispensary.
Dr. M. W. Fish opens dispensary at Shanghai.
Catholic orphanage on Tsung-ming Island established.
Beginning of Mohammedan Rebellion. Plague, formerly existent in West Yunnan, begins to spread over the province.
- 1856-1858. Second Anglo-Chinese war.
1856. Canton Missionary Hospital, closed in October, destroyed by fire in December.
Wai Tsai dispensary burnt.
Kam-li-fau Hospital closed.
Kwan Ato opens military hospital in Fukien Province.
Dr. Jas. Hudson Taylor works for four months at Swatow. Medical activities for Chinese continued for 18 months by Dr. De La Porte.
Rev. R. H. Graves arrives and opens dispensary at Tai-Sha.
- 1856-58. Cholera at Macao.
1857. Dr. Wong Fun arrives in China, opens dispensary at Hongkong.
Dr. Parker definitely leaves China.
Dr. Lockhart goes on furlough, being replaced by Dr. Hobson.
Hobson's "First Lines of the Practice of Surgery" published.
Catholic pharmacy at Hengchowfu opened.
1858. Peace treaties re-affirming the right to build hospitals and similar institutions signed.
Hobson's compilations on Midwifery and Diseases of Children, Practice of Medicine and Medical Vocabulary published.
Second enlarged edition of Devan's book (originally published 1847).
Dr. Wong Fun reopens Kam-li-fau Hospital, working until 1860.
Cholera reported from Canton and Amoy.
1859. Canton Missionary Hospital reopened by Dr. Kerr.
Vaccine Department connected with Canton Hospital opened and new pamphlet on vaccination published by Dr. Kerr.
Dr. Kerr's tract on Fever and Hernia published.
Dr. John Carnegie takes over Amoy Missionary Hospital.
Work for opium addicts begun at Ningpo with assistance of Dr. Jas. Hudson Taylor.
Rev. Wm. H. Collins, M.R.C.S., takes temporary charge of Shanghai Chinese Hospital.
Out of 214 male missionaries working in China under 24 Societies, 28 were physicians (eleven of them also ordained).
1860. First embryotomy on record made by Dr. Wong Fun.
Dr. Wong Fun acts for short time as medical adviser to Viceroy Li Hung Chang.
Dispensary at Fatshan opened.
Dr. Happer takes charge of Kam-li-fau Hospital.
Dr. James Henderson takes charge of Shanghai Chinese Hospital.
French Military Hospital at Shanghai organised.
Cholera in Chekiang.
1861. Dr. Lockhart commences hospital work at Peking.
Publication of "The Medical Missionary in China" by Dr. Lockhart.
Third edition of Devan's work by Wm. Lobscheid.
Military hospital for Chinese Coolie Detachment opened at Tientsin.
Food and a kind of nursing service provided for poor patients of Canton Missionary Hospital.

- Dr. Graves begins regular dispensary work at Shiu-hing.
Chinese Vaccination Institute at Shanghai opened.
New building for the Missionary hospital at Shanghai which assumes the name of Shantung Road Hospital.
Dr. Henderson performs autopsies and holds anatomical demonstrations for Chinese practitioners.
Dr. Collins does temporary work at Foochow.
Some medical activities commenced at Tengchow by Missionary J. B. Hartwell.
Death of the Rev. Bridgman.
1862. Dr. J. R. Carmichael takes charges of the Kam-li-fau Hospital.
Dr. Wm. Parker resumes work at Ningpo.
Dr. McCartee commences medical work at Chefoo.
Jentsutang orphanage and dispensary opened by Catholic Sisters at Peking.
Notes on Chinese Materia Medica by Daniel Hanbury published.
Cholera widespread, reaching Peking and Newchwang, also Japan.
- 1863-64. Medical activities in Gordon's "Ever-Victorious Army" under Dr. A. Moffitt.
1863. Robert Hart appointed Inspector-General of Maritime Customs; appointment of Customs Medical Officers begun.
Imperial T'ung Wen College founded at Peking.
C. A. Gordon's "China from a Medical Point of View" published.
Dispensary at Shek-lung opened under the Rev. Adam Krolczyk.
Dr. G. Dods takes charge of the Kam-li-fau Hospital.
Dr. John Parker takes over Ningpo Missionary Hospital after the death of his brother William.
Dr. H. W. Boone opens dispensary at Shanghai.
Medical missionary work at Peking commenced by Dr. John A. Stewart.
Dr. Wm. Gauld begins hospital activities at Swatow.
Death of Father Lemaitre.
Cholera reported from Canton and Shanghai.
1864. Dr. Lockhart leaves China, being replaced by Dr. John Dudgeon at Peking.
Dr. Collins takes over dispensary founded by Dr. Stewart.
Dispensary at Ningpo opened by the Rev. W. R. Fuller.
French Hospital opened at Shanghai.
Catholic dispensary for the Chinese opened at Shanghai under Brother Bernard.
Dr. James Gentle begins medical work at Chinkiang.
Dispensary at Hankow opened by Dr. Frederick Porter Smith.
Dr. Henderson reads paper on "The Medicine and Medical Practice of the Chinese."
Lobscheid's "Tourist Guide & Merchant's Manual" (containing chemical and pharmaceutical terms) published.
Death of Bishop Boone and of Missionary Genaeher (from cholera).
Cholera reported from Amoy, Foochow, Shanghai, Ichang.
'Pestilence' at Ningpo.
1865. Scientific Department added to T'ung Wen College, Peking.
Dr. James L. Maxwell arrives at Formosa.
New lot for Canton Missionary Hospital bought.
Dr. Kerr takes over the Kam-li-fau Hospital (closed 1870).
Dr. So To-meng joins Canton Missionary Hospital where he serves as regular assistant until 1886.
Wuchow dispensary opened by Dr. Graves.
Rev. Krolczyk commences work at Fu-mun.
Rev. S. P. Barchet, M.D., arrives at Ningpo.
Death of Dr. Henderson who is succeeded first by Dr. Gentle and, after a few months, by Dr. J. Johnston.

- Peking Missionary hospital removed to new premises on Great East (Hatamen) Street.
 Rev. Ernst Faber arrives at Hongkong.
 Cholera reported from Canton and Shanghai.
1866. A. Dr. Patrick Manson commences his career in China as Customs Medical Officer at Takow, Formosa.
 B. New establishment of the Medical Missionary Society opened on present site of Canton Hospital; medical school installed.
 C. New hospital and leper refuge established at Swatow (also dispensaries at two out-stations).
 Dispensary at Pok-lo opened.
 Revs. E. H. Thomson and H. N. Woo begin dispensary work at Shanghai thus laying foundation for St. Luke's Hospital.
 Father Seckinger establishes dispensaries at Chinkiang, Tan-yang and Yangchow.
 Hospitals at Hankow opened by Dr. F. Porter Smith and Customs Medical Officer A. G. Reid (on behalf of the London Missionary Society).
1867. A. Death of Rev. Dyer Ball at Canton.
 D. Plague reaches Yunnanfu.
 A. Hospital at Takao (Takow), Formosa, opened under Drs. Maxwell and Manson.
 B.
 C. Dr. Wong Fun in charge of Canton Missionary Hospital during Dr. Kerr's furlough (until January, 1868).
 Dr. A. O. Treat arrives in China under the American Board Mission.
 Dr. Jas. Hudson Taylor opens short-lived dispensary at Hangchow.
 D. Plague at Pakhoi.
 Cholera reported from Foochow.
1868. A. Police Surgeon J. G. S. Coghill engages in part-time supervisory duties in connection with public health in the Shanghai International Settlement.
 B.
 C. Dispensary at Tungkun opened under the Rev. J. Nacken.
 Rev. Fuller arrives at Chefoo and commences medical practice, chiefly among the Chinese.
 Dr. Geo. Shearer takes charge of the London Missionary Society's medical work at Hankow.
 Dr. Maxwell reopens work at Tainan, Dr. Manson taking over the Takao hospital.
 Dispensary of the London Missionary Society at Tientsin opened.
1869. A. Dr. E. Henderson appointed Police Surgeon and Municipal Health Officer, International Settlement, Shanghai.
 B.
 C. Rev. Faber begins regular medical work at Fu-mun.
 Lock Hospital at Shanghai opened.
 Catholic Sisters commence dispensary work at Zi-ka-wei (Shanghai).
 Hongkong I Ts'z closed.
 Dr. J. M. Hunter opens dispensary at Newchwang.
 Catholic *Hôpital de St. Vincent* opened at Hangchow.
1870. A. Proper death certificates introduced in International Settlement, Shanghai.
 B.
 C. Vaccination Establishment opened by Municipal Council, International Settlement of Shanghai.
 Dr. D. W. Osgood commences work at Foochow.
 Dr. Alex. Thomson takes temporary charge of Swatow hospital.
 Dr. E. P. Hardey takes over Dr. Porter Smith's work at Hankow.
 Dr. Treat commences work at Yüchow.
 Catholic dispensaries at Ichang and Kingchowfu opened.

1871. A. Dr. Patrick Manson commences work at Amoy.
Customs Medical Reports issued.
- B. First two volumes of Kerr's "Principles of Chemistry" appear (3rd Volume following in 1872 and 4th in 1875).
Kerr's "Manual of Materia Medica" published.
Porter Smith's "Contributions towards the Materia Medica and Natural History of China" published.
- C. "Hall of Sustaining Love", embodying hospital and free dispensary opened at Canton.
Dr. G. D. Patterson works for some months at Tengchow.
Dr. J. Brown commences medical activities at Chefoo, continuing for about 3 years.
Dr. W. A. Henderson instals hospital and 2 dispensaries at Chefoo.
Dr. M. Dickson commences work at Tainan (Taiwanfu).
Dr. David Manson appointed Customs Medical Officer at Takow and Taiwanfu.
- D. Plague in Yunnan and severe outbreak at Pakhoi.
1872. A. Dr. Kerr proposes opening of an asylum for the insane.
Tung Wah Hospital opened at Hongkong.
Dr. Manson publishes method for operation of elephantiasis of the scrotum.
- B. Kerr's "Essentials of Bandaging" published.
- C. Dr. Osgood opens hospital at Ponasang (Foochow).
Rev. H. D. Porter, M.D., reaches Tientsin.
Dr. J. Galt begins work at Hangchow.
Rev. G. L. Mackay establishes himself at Tamsui and attends patients.
Death of the Rev. Krolezyk.
1873. A. Dr. Lucinda Combs, first woman physician appointed to China, arrives.
Sanitary regulations for the port of Shanghai promulgated.
Quarantine against cholera established at Amoy.
Case of scarlet fever observed at Chefoo.
- B. Kerr's tract "Method for Restoring the Drowning" published.
- C. Sai-nam dispensary opened under Dr. Graves.
Dr. David Manson joins his brother at Amoy.
Rev. S. A. Davenport begins medical work at Ningpo (for about a year).
Dr. S. F. Bliss commences work at Tengchow.
Opium refuge and hospital opened at Hangchow.
Chinese Life-Saving Association at Wuhu resumes work including attendance on poor patients.
Dr. Treat goes to Paotingfu where he continues work for some years.
Death of Dr. Hobson.
1874. A. Anti-Foot-Binding Society formed at Amoy.
- B. Dr. Manson translates Curling's "Diseases of the Testis."
Dr. Kerr's "Symptomatology" and "Manual of Skin Diseases" appear.
Materia Medica translated by Kao Chi-liang.
- C. First female stone operation performed at Canton.
Fong Pin-sho, devoted to the incurably ill, founded at Canton.
Dispensary at Fuk-wing established under the Rev. Nacken and Tungkun dispensary reopened under the Rev. Faber.
Proper hospital installed at Amoy.
Rev. R. Swallow commences work at Ningpo.
New building of Shantung Road Hospital, Shanghai, opened.
Dr. Sigourney L. Trask arrives at Foochow.
Catholic Nan Tang Hospital opened at Peking.
Hospital in Taiping Road, Hankow, opened under Dr. Reid.

- Rev. J. B. Frazer, M.D., begins work (about 3 years) with the Rev. Mackay at Tamsui, Formosa.
 Dr. Letitia Mason begins work at Kiukiang.
 Rev. A. C. Bunn, M.D., commences activities at Wuchang.
 Death of Kwan Ato.
1875. D. Cholera reported from Swatow; diarrhoea outbreak at Shanghai.
 Smallpox severe in East Asia.
- A. Manson's first important paper on Elephantiasis appears.
 B. Dudgeon's "Miscellaneous Essays on Western Medicine" and Anatomical Atlas published.
 Kerr's "Treatise on Syphilis" appears.
 C. Ovariectomy attempted in Canton Missionary Hospital.
 Dispensary and (soon afterwards) hospital for women and children established at Peking.
 Dr. J. K. Mackenzie begins work at Hankow.
 Dr. W. E. Tarbell comes to Kiukiang.
 Rev. A. W. Douthwaite commences work at Shao-hsing.
 Catholic dispensary at Lao-ho-kow opened.
- D. Cholera at Swatow and Shanghai (where a notification on precautions is published by the Commissioner of Customs).
1876. A. At this time, i.e. about a year after Lister's method was perfected, operations in the Gützlaff Hospital, Shanghai, were performed under antiseptic precautions.
 B. John Fryer translates "Handbook of Medicine" by Rayle and Headland.
 C. During Dr. Kerr's absence on furlough, Dr. J. F. Carrow in charge of the Canton Missionary Hospital.
 Rev. L. H. Gulick, M.D., arrives at Shanghai.
 Rev. H. A. Randle comes to Chefoo.
 Dispensary and hospital at Chinkiang established by Customs Medical Officer A. R. Platt.
 Dr. A. P. Langley begins work at Hankow.
 Dr. Douthwaite opens dispensary at Kü-chao.
 16 missionary hospitals, 24 dispensaries and 41,281 patients reported.
- D. Smallpox epidemic at Hoihow (Hainan).
1877. A. Manson's paper establishing the role of mosquitoes in the transmission of filariae published.
 Conference of Protestant Missionaries at Shanghai held.
 Scheme for control of prostitution inaugurated at Shanghai.
 B. Thirty medical students reported in training in China.
 C. Hospital for foreigners at Shanghai removes to its present site near the Soochow Creek and assumes the name of General Hospital.
 Hospital for women opened at Foochow under Dr. Trask.
 Free dispensaries under old-style practitioners run for a short time at Foochow.
 New hospital erected at Swatow with separate accommodation for women and paying patients.
 Miss L. A. Howard, M.D., succeeds Dr. Combs at Peking.
 Dr. H. T. Whitney opens a dispensary at Shaowu.
 Rev. W. R. Lambuth, M.D., commences work at Nanziang.
 Miss S. J. Anderson, M.D., said to have worked at Tsinanfu.
- D. Plague severe at Pakhoi.
 Cholera reported from Amoy, Foochow, Wenchow, Ningpo, Shanghai, Tientsin and Newchwang.
 Smallpox reported from Swatow.
- 1877-78. Great famine in China.
1878. A. Death of Drs. Wong Fun and David Manson.

- B.
- C. Special opium ward opened at Canton.
Dr. Barchet opens Homeopathic Dispensary and Opium Refuge at Ningpo.
New hospital and opium refuge opened at Ponasang (Foochow).
Opium refuge opened at Peking.
Miss A. D. H. Kelsey, M.D., commences work at Tengchow.
Dr. Peter Anderson assumes charge of Missionary hospital at Taiwanfu.
Medical missionary work at Ichang commenced.
Elizabeth Bunn Memorial Hospital for women and children opened at Wuchang.
Dr. D. Stenhouse begins work at Laoling.
Dr. B. Van S. Taylor commences medical activities in Fukien Province.
Dr. E. P. McMarlane arrives in Yangchow.
- D. Cholera reported from Foochow, Wenchow and Shanghai, Typhus from T'entsin.
- 1879. A. Dr. Mackenzie begins work at Tientsin gaining, through the successful treatment of Lady Li (together with Drs. Irwin and Howard), the confidence and support of Viceroy Li Hung Chang.
Death of Dr. Colledge who is succeeded as President of the Medical Missionary Society by Dr. Peter Parker.
B. Female students admitted to Canton medical school.
"Outline of Eye Diseases" published by Chinese doctors.
C. Dr. H. W. Boone returns to Shanghai.
Customs Medical Officer T. Rennie opens dispensary and hospital for Chinese at Foochow.
Miss C. H. Daniells opens small dispensary at Swatow.
Dr. B. C. Atterbury arrives at Peking.
Sanitarium of the China Inland Mission at Chefoo opened.
Dr. Mackenzie replaced at Hankow by the Rev. W. G. Mawbey.
Dr. W. W. Myers commences work at Takow.
Commissioner of Customs opens short-lived free dispensary at Wuhu.
Miss K. C. Bushnell comes to Kiukiang.
Rev. A. W. Douthwaite removes to Wenchow.
Dr. D. J. Macgowan appointed Customs Medical Officer at Wenchow.
Dr. Whitney's hospital at Shaowu opened.
- 1880. A. Hospital erected at Tientsin with funds collected under the patronage of Viceroy Li Hung Chang.
Sanitary Department installed in the International Settlement of Shanghai.
Leper Asylum at Pao-Sa-Law (Macao) founded.
B. Dr. Myers commences training of "apprentices."
Dr. Kerr publishes a Chinese medical journal.
Kerr's Treatise on Eye Diseases published.
C. Dr. Boone recommences work at Shanghai.
Dr. Osgood dies, his work at Foochow being continued by Dr. Whitney.
Dr. Gauld returns to Shanghai, being replaced at Swatow by Dr. Alex. Lyaill.
Catholic hospitals at Hankow and Kiukiang opened.
Dr. Henry D. Porter begins work at P'ang-chuang.
Dr. Peck commences dispensary work at Paotingfu.
Medical activities at Taiyuanfu begun by Dr. R. H. A. Schofield.
Dr. E. A. Aldridge appointed Customs Medical Officer at Hoihow.
Dispensary reported opened at Tsinanfu under Dr. S. A. Hunter.
- D. Plague at Lien-cheng.
Smallpox severe at and around Canton.

1881. A. Dr. Duncan Main arrives at Hangchow.
 B. Viceroy's Hospital Medical School opened at Tientsin.
 Dr. Boone teaches in the newly-opened St. Luke's Hospital at Shanghai.
 Osgood's Anatomy finished and published by Dr. Whitney.
 Kerr's Manual of Operative Surgery, Treatise on Inflammation and Treatise on Fevers appear.
 Work on Internal Medicine translated by Kao Chi-liang.
 C. Rev. Jos. Clarke Thomson, M.D., arrives at Canton.
 New vaccination station established at Canton by Viceroy Chang Shu-sheng.
 Medical activities at Fatshan resumed by the Rev. Charles Wenyon, M.D.
 Tai-ping-shan Dispensary opened at Hongkong.
 Dr. A. Macdonald Westwater begins work at Chefoo.
 David Manson Memorial Hospital opened at Takow.
 Miss V. C. Murdock, M.D., commences dispensary work at Kalgan.
 Isabella Fisher Hospital opened at Tientsin under Dr. Howard.
 Dr. R. B. Fishburne, American Presbyterian Mission, arrives at Hangchow.
 Miss E. Gilchrist, M.D., begins work at Kiukiang.
 Dr. W. A. Deas commences work at Wuchang.
 C. C. Jeremiassen treats patients during his itinerations on the island of Hainan.
 Dr. David Grant commences work at Chinchow.
 Dr. J. E. Stubbert comes to Nanking, working until 1883.
 Work at Weihsien begun by Dr. H. R. Smith.
 Dr. Marianna H. Holbrook arrives at Tungchow, staying until 1887.
 D. Cholera reported from Hainan, Canton, Foochow, Shanghai, Yangchow, Nanking, Wuhu and Seoul.
 Typhus reported from Hupeh.
1882. A. Rev. Thos. Gillison takes over medical work of the London Missionary Society at Hankow.
 B. Kerr's Treatise on Diseases of Different Organs appears.
 C. Dr. Thomson goes to Lienchow.
 Rev. Douthwaite removes to Chefoo.
 Chi-shu-t'ang, providing medical aid, established at Wuhu.
 Dispensary and vaccination station established by Taotai at Kiukiang.
 Dr. Wm. Wilson begins medical work at Hanchung.
 D. Plague at Pakhoi and district.
 Cholera reported from Hainan, Amoy (quarantine regulations introduced), Wenchow, Shanghai, Soochow, Yangchow, (Annam and the Philippines).
1883. A. Dr. Patrick Manson goes to Hongkong.
 Hongkong Sanitary Board instituted.
 Shanghai Waterworks completed.
 Arrival of prominent medical workers—D. Christie (Mukden), P. B. Cousland (Swatow), J. B. Neal (Tengchow), Elizabeth Reifanyder (Shanghai).
 Sanitary regulations for the Port of Swatow adopted.
 B. Dr. Duncan Main commences education of students at Hangchow.
 Soochow Hospital medical school opened.
 Kerr's Manual of Theory and Practice of Medicine and Treatise on Hygiene published.
 C. Rev. W. S. Palmer begins medical work in the North River District near Amoy.
 Dr. Stubbert moves to Ningpo.
 Dr. Daniells opens hospital for women and children at Foochow.
 Dr. Ella F. Swinney begins work at Shanghai.

- Dr. H. N. Allen commences work at Nanking.
 Work among the Hakkas begun by Rev. Dr. W. Riddel and Dr. J. F. McPhun.
 Dispensary at Chungking opened by the Rev. G. B. Crews.
 Rev. I. J. Atwood begins work at T'aiku.
 Dr. E. C. Horder arrives at Pakhoi.
- D. Plague at Lien-chou.
 Cholera widespread in China, extending from Canton to Manchuria and from Shanghai to Hsuehchow (1,500 miles from the mouth of the Yangtse River).
 Typhus-like outbreak in Ichang district after a famine.
1884. A. Arrival of Miss Elizabeth McKechnie, the first Protestant Nurse to come to China.
 Exhibit from Ningpo sent to International Health Exhibition in London.
 Beginning of health laboratory work (investigation of cholera) at Shanghai.
 B. Teaching at Mukden commenced under Dr. Christie.
 Chinese Medical Journal edited by Dr. D. M. Yin appears.
 Kerr's Manual of Physiology published.
 Hill & Daly's "Exhortations to Abandon Opium Smoking" (with chapter on treatment) published.
 C. A. Gordon's Epitome of the Customs Medical Reports published.
- C. Dr. R. J. J. Macdonald arrives at Fatshan.
 Rev. A. L. Macleish takes charge of the Amoy Hospital.
 Dr. Reifsnnyder begins dispensary work at Shanghai.
 Dr. K. C. Woodhull arrives at Foochow.
 Dr. Lucy H. Hoag commences work at Chinkiang.
 Miss L. E. Akers (Mrs. Perkins) takes charge of the Isabella Fisher Hospital, Tientsin.
 Dr. O. A. Dukes arrives at Nanziang (1886 to Japan).
 Miss Mildred Phillips arrives at Soochow.
 Dr. A. P. Peck takes over medical work at P'ang-chuang.
 Rev. R. C. Beebe, M.D., institutes permanent medical work at Nanking.
 Dr. J. M. Mathewson takes over the work at Weihsien.
 Dr. Riddel builds hospital at Wukingfu.
 Dr. B. Van Someren Taylor leaves for Fuh-ning-fu.
 English Methodist (New Connexion) Society begins medical work at Tangshan.
 Dr. W. K. Aitken of the same Mission arrives at Kaiping.
 Dr. L. D. Denny begins work at Tsunhua.
 Death of Drs. Carnegie and Hunter.
- D. Plague at Pakhoi.
 Cholera reported from Chinkiang, Yangchow and Newchwang.
 Scarlet Fever recorded at Tsung-ming Island (near Shanghai) and Mukden.
1885. A. Sun Yat-sen enters Canton Medical School.
 Yamei Kin graduates at New York.
 Colliery Hospital at Tangshan opened.
 B. Dr. Neal commences regular medical work and training of students at Tengchow.
 First class of Viceroy's Hospital Medical School graduates.
 C. Miss Mary W. Niles, M.D., opens dispensary for women and children at Canton.
 Dr. J. M. Swan arrives at Canton.
 Chinese Insane Asylum opened at Fatshan.
 Miss M. H. Fulton commences dispensary work at Kwaiping.

- Margaret Williamson Hospital, Shanghai, opened.
 Dr. Swinney opens proper dispensary at Shanghai.
 Arrival at Shanghai of Dr. E. M. Griffith and Miss R. McCown.
 Miss C. A. Corey succeeds Dr. Trask at Foochow.
 Dr. Lambuth transferred to Peking (1886 to Japan).
 Rev. Jas. Cameron in temporary charge of medical missionary work at Chefoo.
 Wesleyan Mission resumes medical work at Hankow.
 Miss A. D. Gloss, M.D. takes charge of the Isabella Fisher Hospital at Tientsin.
 Dr. Main opens new hospital at Hangchow.
 Dr. C. P. W. Merritt takes over dispensary at Paotingfu.
 Dr. H. M. McCandliss arrives in Hainan.
 Chinese Hospital established at Hoihow.
 Dr. Robert J. Coltman Jr. opens dispensary at Tsinanfu.
1886. D. Cholera reported from Foochow, Shanghai, Wuhu and Ichang.
- A. China Medical Missionary Association founded.
 Hongkong Medical Society organised.
- B. Myers' pupils pass preliminary examination.
 Dr. Douthwaite (Chefoo) forms medical class.
 Medical class organized at Peking by Dr. E. T. Pritchard.
 Dr. Woodhull begins training female students at Foochow.
 Dr. Beebe educates students in the newly-opened Philander Smith Memorial Hospital Nanking.
- C. Dr. J. C. Thomson makes Macao his headquarters, working mainly at Yeung Kong.
 Medical work of the Church Missionary Society commenced under Customs Medical Officer C.C. de Burgh Daly at Ningpo.
 Catholic Chala Hospital and Anting Hospital (Dr. Atterbury) opened at Peking.
 Chinese hospital at Chefoo opened under Customs Medical Officer W. A. Henderson.
 Opium refuge at Taiyuanfu established.
 Rev. W. E. Macklin, M.D., arrives at Nanking.
 Rev. J. Cameron begins work at Chungking.
 Regular activities of Dr. Horder at Pakhoi commenced.
 Rev. J. Gilmour sees patients during his itinerations in Eastern Mongolia.
 Dr. and Mrs. J. R. Watson begin work at Tsing-chow-fu.
 Dr. N. S. Hopkins arrives at Tsunghua.
 Wesleyan dispensary at Shiu-chou opened.
 Dispensary of Rhenish Missionary Society at Tungkun established.
 Dr. J. C. Stewart arrives at Kwei-hwá-ch'eng, Shansi.
 Lintsing Memorial Hospital (Shantung) opened.
- D. Cholera reported from Shanghai and Korea.
 Flood at Newchwang, followed typhus to which Rev. A. Westwater succumbs.
1887. A. China Medical Missionary Journal appears.
 Provisional committee for establishment of Insane Asylum formed.
- B. Hongkong Medical College founded; Dr. Sun Yat-sen among the students.
 Nurses' training begun by Dr. Boone at Shanghai.
- C. New Chinese hospital opened at Foochow under Customs Medical Officer Rennie.
 Alice Memorial Hospital, Hongkong, opened. Dr. James Cantlie joins staff.
 Arrival at Peking of Drs. G. Y. Taylor, Rev. W. H. Curtiss and Rev. Crews.

- Mrs. C. R. Mills opens school for deaf boys at Tengchow (discontinued 1896, reopened Chefoo 1898).
 Dr. S. R. Hodge comes to Hankow.
 Work for lepers commenced at Hangchow.
 Dr. G. A. Stuart arrives at Wuhu.
 Hospital for women and children (first temporary) opened at Soochow.
 New missionary hospital opened at Mukden.
 Nurse Esther H. Butler begins work in Dr. Beebe's hospital, Nanking.
 Dr. J. H. Ingram takes over work at Tungchow.
 Dr. Horder opens hospital at Pakhoi.
 Dr. Edna J. Terry joins Tsunhua station.
 Drs. W. L. Pruett and R. H. Parry commence work at Chengtu.
 Dr. Westwater comes to Manchuria settling first at Haicheng.
 Dr. Leon Wieger, M.D., of the Jesuit order arrives at Hsien hsien, Chihli.
 33 British and 41 American medical missionaries recorded.
1888. D. Cholera reported from Lienchow near Pakhoi, Ningpo, Shanghai, Chinkiang and Chefoo.
- A. Dr. Yamei Kin arrives in Amoy, working until 1889.
 Fiftieth anniversary of the Canton Medical Missionary Society celebrated.
 Death of Drs. Peter Parker and J. K. Mackenzie.
- B. Myers' pupils pass final examination.
 Dr. Crews conducts medical classes in connection with Peking University.
 Training of nurses begun by Nurses Ella Johnson (at Foochow) and Butler (at Nanking).
- C. Hospital for women and children, connected with St. Luke's, Shanghai, erected.
 Work for women begun at Peking under Dr. Marian Sinclair and Nurse McKillican.
 Women's hospital at Hankow opened.
 Dr. Gavin Russell of the E.P.M. arrives at Taiwanfu.
 Dr. F. C. Roberts takes Mackenzie's place at Tientsin.
 Dr. Whitney removes to Shaowu.
 Dr. Shrubshall arrives, continuing the work in the Laoling district.
 Dr. A. Fahmy opens hospital at Changchow.
 Dispensary and small hospital opened by Dr. S. S. McFarlane at Chichow.
 Dr. Cousland removes to Chaochowfu.
 Hospital at Nang-wa opened by Dr. John Rigg.
 Dr. A. Morley establishes dispensary and small hospital at Tehngan-fu.
 Medical activities of Dr. Edgar Woods commenced at Tsingkiangpu.
- D. Cholera reported from many localities extending from Kwangtung Province to Shantung and Korea.
1889. A. Dr. Patrick Manson leaves China, his place as Dean being taken by Dr. Cantlie.
 B. Dr. Mary Brown arrives at Weihsien and begins education of female pupils.
 C. Dr. J. S. Grant takes over American Board Mission hospital at Ningpo.
 Dr. John C. Thomson takes charge of the Alice Memorial Hospital, Hongkong.
 Dr. Murdock is transferred to Peking being replaced at Kalgan by Dr. F. E. McBride.

- Men's hospital opened at Hankow.
 General hospital established at Wuhu under Dr. Stuart.
 Dr. A. M. Mackay commences hospital work at Wuchang.
 Dr. J. Goldsbury arrives at T'aiiku.
 Dr. J. Kuehne arrives at Tungkun.
 British nurse Frances Johnson comes to Nang-wa.
 Neerbosch Hospital at Siokhe opened under Dr. Otte.
 Arrival of Dr. J. A. Greig at Kirin.
 Dr. E. R. Wagner begins work at Linch'ingchow.
 Medical activities at Changpoo commenced by Dr. J. Howie.
 61 missionary hospitals, 44 dispensaries and 348,239 patients reported.
1890. D. Plague at Lungchow.
 Slight cholera outbreak at Shanghai.
- A. General meeting of the Medical Missionary Society. Nomenclature Committee appointed.
- B. First class of nurses graduates at Foochow.
- C. Dr. H. N. Kinnear takes charge of Ponasang Hospital, Foochow.
 Drs. Alice K. Marston and Gloss commence dispensary work at Peking.
 Chinese Hall of Benevolence, Chefoo, opened.
 Missionary hospital opened at Ichang under Customs Medical Officer E. A. Aldridge. Taken over by Dr. Wm. Pirie.
 Catholic hospital opened at Ichang.
 Arrival at Chungking of Dr. C. J. Davenport and Mr. & Mrs. Davidson.
 Dr. Neal goes after a short stay at Tengchow to Tsinanfu.
 Chinese hospital at Pakhoi opened.
 Dr. Wm. McClure settles at Ch'uwang (Honan).
 Arrival of Drs. Wm. W. Colborne (Canton), B. L. Paton (Chuan-chow) and F. H. Taylor (Ganking).
- D. Influenza pandemic.
 Plague reported from Lungchow and Wu-chu.
 Cholera reported from Ningpo, Shanghai, Wuhu, Tientsin and Korea.
891. A. Dr. Kerr buys piece of ground to erect Asylum for the Insane.
- B. Woman's Hospital School established at Soochow.
 First class of Dr. Woodhull (Foochow) graduates.
- C. Dr. S. Lavinia Halverson opens dispensary at Canton.
 Dr. Ellen M. Lyon commences work at Foochow.
 Yü-yin-t'ang (with hospital and almshouse) founded at Wuhu.
 Dr. J. H. McCartney opens dispensary and hospital at Chungking.
 Dr. Davenport begins in a similar way.
 Hospital at Fenchoufu built by Dr. Atwood.
 Work for lepers commenced at Kien-ning.
 Rev. Frazer Smith, M.D., settles at Hsinchen (Honan).
 Dr. E. C. Machle commences work at Lienchow.
 Dr. C. H. Finch arrives at Suifu (Szechwan).
 Hospital at Tataochen (Formosa) opened.
 Dispensary at Ichowfu opened by Dr. C. F. Johnson.
 Dr. Horace A. Randle begins regular medical work at T'ung-shin near Chefoo.
 Medical work of the Wesleyan mission commenced at An-lu.
 Mrs. B. C. Patterson, M.D., arrives at Hsü-chien, N. Kiangsu.
 Dr. Happer retires; death of Bishop Boone and Dr. L. H. Gulick.
- D. Influenza pandemic continuing.
 Plague reported from Lien-cheng, Lungchow and Kao-chau.
 Cholera reported from Swatow and district, Shanghai, Korea.

1892. A. First microbiological research by Chinese published—*Protective Mechanism in Ascaris Terrestris*—by Dr. Lim Boon-keng, M.B., C.M., (Edin.)—(Proc. Royal Society).
Institute for preparation of smallpox vaccine opened at Hongkong.
- B. First graduation of the Hongkong Medical College; Sun Yat-sen graduates.
- C. Rev. Swallow commences medical work at Ningpo.
Medical activities of the China Inland Mission at Chinkiang begun.
Special building for male lepers opened at Hangchow.
Dr. Lucy Gaynor arrives at Nanking.
McIlvaine Hospital, Tsinanfu, opened.
Leper work at Kutien and Hinghwa begun.
Dr. O. L. Kilborn commences work at Chengtu.
Dr. Westwater instals himself at Liaoyang.
Dr. Th. Young commences work at Shwangchengp'u.
Dr. N. J. Case begins work at Weihaiwei.
Retirement of Dr. D. J. Macgowan.
- D. Plague reported near An-p'u.
Cholera reported from Foochow, Ichang, Chengtu, Chungking and other localities in the Upper Yangtse Valley.
Influenza still occurring in some localities.
1893. A. Sanitary Board created in the Shanghai International Settlement.
- B. Tientsin medical school becomes Government institution under the name of Peiyang Medical College.
Dr. Gregory forms a medical class in the newly-opened Wiley General Hospital at Kutien.
- C. Dr. Smyth commences work at Ningpo.
Dr. Whitney takes over the dispensary at Pagoda Anchorage near Foochow.
Nethersole Hospital, Hongkong, opened.
Dr. W. F. Seymour comes to Tengchow.
Military hospital opened at Chefoo.
Building for women lepers arranged for at Hangchow.
Dr. E. L. Bliss begins dispensary work at Shaowu.
Dr. Van Schoick goes to Chiningchow, working until 1900.
Dr. G. Y. Taylor removes to Paotingfu.
Dr. H. L. Canright begins work at Chengtu.
Rev. R. J. Gordon, M.D., commences activities at Changchun.
Dr. A. G. Parrott settles at Laohokow.
Dr. Venable commences work at Kashing, continuing until 1919.
Dr. H. Wittenberg arrives at Kiayingchow.
Missionary hospital established at Engch'un.
Death of Rev. Prof. E. P. Thwing, M.D. and Dr. Goldsbury.
- D. Plague reported from Yunnan, Kwangsi and Lungchow.
Serious epidemic of undetermined character near Wuhu.
Cholera reported from Chungking.
Smallpox reported from Shanghai and Ningpo.
Diphtheria reported from Laoling and Chichow, influenza reported from Foochow.
1894. A. Plague epidemic at Canton and Hongkong. *B. pestis* discovered.
Quarantine measures adopted at Swatow, Ningpo and Shanghai.
Red Cross activities inaugurated through the Sino-Japanese war.
- B. Co-educational medical college opened at Soochow.
100 Chinese physicians trained in the Canton Missionary Hospital reported practising in Kwangtung Province.
- C. Dr. G. D. Lowry arrives at Peking.
St. Peter's Hospital, Wuchang, built.
Dr. Hogg commences work at Wenchow.

- Dr. Gregory retires, being replaced at Kutien by Dr. J. E. Skinner.
 Dr. J. B. Woods succeeds Dr. Edgar Woods at Tsingkiangpu.
 Medical work of London Missionary Society at Siaokan begun.
 Medical work of Canadian Methodist Mission commenced at Kiating.
 Rev. H. A. Randle, M.D. comes to Pingtu.
 Dr. S. P. Barchet opens hospital at Kinhwa.
 Death of Drs. Roberts, Fuller and Lucinda Graham (from cholera).
1895. D. Besides Canton and Hongkong plague reported from Pakhoi, Lungchow, Mengtsz, Samshui and Swatow.
 Smallpox severe at Ningpo.
 Influenza reported from Pakhoi, Macao and Foochow.
 Diphtheria reported from Chichow.
- A. Medical Officer of Health appointed at Hongkong.
 Miss Hū King-eng, graduated in America in 1894, returns to China (Foochow).
- B.
- C. Dr. Ruth C. Bliss arrives at Canton.
 Dr. Swinney, Shanghai, retires, succeeded by Dr. Rosa W. Palmborg.
 Sleeper Davis Hospital opened at Peking under Dr. Gloss.
 Dr. Eliza E. Leonard takes charge of Dr. Sinclair's work at Peking.
 Dr. Davenport is transferred to Wuchang.
 Proper hospital built at Chengtu.
 Leprosorium opened at Siaokan.
 Dr. Josephine M. Bixby commences work at Kiehyang.
 Dr. Howard Taylor begins medical work at Chenchowfu and Tai-kang, Honan.
- D. Plague reported from Canton and Hongkong (little), Macao, Mengtsz, Pakhoi, Lungchow, Hainan, Swatow, Amoy.
 Cholera reported from Pakhoi, Swatow, Wenchow, Shanghai, Soochow, Chinkiang, Hankow, Hanyang, Chefoo and Korea.
 Measles unusually virulent at Pakhoi.
1896. A. Drs. Ida Kahn and Mary Stone (Shih Mei-yu) return after graduation to Kiukiang and begin medical work.
 Miss Zoh Fo Mei graduates at Soochow.
 Hongkong and China Branch of the British Medical Association founded.
 Smallpox vaccine manufacture begun at Shanghai.
- B. Dr. Boone's educational enterprise at Shanghai reorganised into the Medical Department of St. John's College.
 Educational work of the Methodists at Peking consolidated.
 Medical lectures given by Dr. Coltman in the T'ung Wen Kwan, Peking.
 Dr. Stuart transferred to Nanking to take charge of medical teaching.
 Medical education commenced at Chichow under Dr. McFarlane.
 Canton Medical School reports total of 150 graduates.
- C. Chinese Fong Pin Hospital opened at Canton.
 Small missionary hospital opened at Kalgan.
 Dispensary for students of Imperial University, Tientsin, opened by Dr. Frazer.
 Dr. D. Rankine arrives at Ichang.
 Dr. F. W. Marshall takes charge of work in the Laoling district.
 Dr. Daisy Macklin begins work at Nanking.
 Hospital for women and children opened at Nanking by Dr. Gaynor.
 Dr. R. Wolfendale resumes medical missionary work at Chungking.
 First medical women arriving under the Church of Scotland Mission in Manchuria.
 Burns Memorial Hospital opened at Chaochowfu.
 Miss Marion Hook opens dispensary at Lo-yuan.

- Hospital of Hauge's Synodes Mission opened at Fanch'eng.
Death of Drs. Lockhart and Mackay.
- D. Plague reported from Canton, Tungkun, Hongkong, Samshui, Mengtsz, Pakhoi, Hainan and Swatow.
Cholera reported from Lungchow, Tungkun, Shanghai, Hankow, summer-sickness from Wuhu.
Typhus reported from Hankow, drought and famine followed by sickness from Ningpo.
Influenza at Newchwang.
1897. A. Plant for Insane Asylum, Canton, finished.
B. Dr. Kerr freed from routine of the Canton Hospital and concentrating upon educational and literary work.
Francis Clark becomes Dean of the Hongkong Medical College.
Neal reports 268 graduates and 194 students in training.
C. Victoria Nursing Home presented to Shanghai Municipality.
Hospital for Chinese under Dr. Daly opened at Newchwang.
Elizabeth Blake Hospital opened at Soochow.
Hospitals for women established at Mukden and Liaoyang.
Presbyterian Mission Hospital transferred from Kiungchow to Hoihow and new establishment opened at Nodoo.
Hospital at Ichowfu opened.
Canadian Methodist Missionary hospital completed at Kiating.
Dr. James Butchart begins permanent medical work at Luchowfu.
Dr. Goddard settles at Ing-hok, near Foochow.
Medical worker of the English Presbyterian Mission stationed at Chianghoa.
- D. Plague reported from Canton, Hongkong, Mengtsz, Pakhoi, Hainan, Swatow, Amoy.
Great famine, followed by disease in Eastern Szechwan.
Relapsing fever reported from Hankow.
1898. A. First patient to Canton Insane Asylum admitted.
Dr. A. Stanley appointed whole-time Medical Officer, Intern. Settlement, Shanghai.
Drs. Hū King-eng and Ida Kahn attend International Congress for Women in London.
B.
C. Hope Hospital, Amoy, opened.
China Inland Mission Hospital built at Chinkiang.
Missionary hospital, Wenchow, opened.
Women's Department connected with Kien-ning Hospital opened.
French Consular Medical Officer stationed at Mengtsz.
Dr. Mabel C. Poulter commences medical work at Futsing.
Dr. M. Isabella French takes charge at Luho.
Medical work at Wuchow begun (Chinese Hospital, Baptist and Wesleyan Missions).
Hao-shih Hospital of the L.M.S. opened.
- D. Plague reported from Canton, Hongkong, Macao, Pakhoi and district, Samshui, Hinghwa, Swatow and Wuchow.
Cholera almost epidemic near Amoy.
1899. A. Quarantine Station at Shanghai opened.
Tientsin Waterworks completed.
Dr. Hū King-eng takes charge of Woolston Memorial Hospital, Foochow.
B. Dr. Johnson forms medical class at Ichowfu.
Training of midwives commenced by Dr. Smyth, Ningpo.
Dr. Saville opens a dispensary and begins instruction of nurses at Peking.

- C. Kerr leaves Canton Hospital (to take charge of Insane Asylum) succeeded by Dr. Swan.
 Wilhelmina Hospital, Amoy, opened.
 Dispensary for women and children opened at Foochow.
 Community Hospital Tientsin completed.
 Tooker Memorial Hospital Soochow opened.
 Dr. Hodge arrives at Paotingfu.
 Hospital for Women opened at Tsinanfu.
 Medical work commenced at Changteh (Hunan).
 Hospital for women and children opened at Lienchow.
 Hospital built at Hinghwa.
 Dr. Henry Fowler comes to Siaokan.
 Regular medical work commenced at Chuchow.
 Dispensary of Church of England Zenana Mission opened at Dangseng.
 Dr. J. A. C. Smith arrives at Sian.
 Dr. Eubank commences work at Huchow.
 Work of Catholic Franciscan Sisters begun in Shansi.
 Death of Drs. Douthwaite and Faber.
- D. Plague reported from Pakhoi, Hongkong, Swatow district, Wuchow.
 Plague epidemic at Newchwang; quarantine established at Tientsin and a station at Taku.
 Smallpox reported from Shanghai and Hainan.
1900. A. Boxer Rising, bringing medical work in most stations to a standstill.
 Railway Hospital at Shanhaikwan opened.
- B.
- C. Franco-Chinese Hospital at Canton opened.
 Tung-chi Hospital, Shanghai, founded.
 British military dispensaries for Chinese opened at Peking, one of them leading to the foundation of the British Charitable Hospital.
 Catholic Hospital St. Vincent opened at Peking.
 Dr. Lucy P. Bement starts work at Shaowu.
 French Government Hospital established at Pakhoi.
 Work at Luho resumed by Drs. de Vol and French.
 Hart Ward at Wuchow opened.
 Medical missionary work at Siangtan commenced.
 Activities of Methodist Episcopalians begun at Ngu-cheng.
 Death of Dr. Marston.
- D. Plague reported from Pakhoi, Hongkong, Hainan, Wuchow, Swatow and district.
 Smallpox recorded from Pakhoi, Swatow and Tibet.
1901. A. Death of Dr. Kerr; Dr. Selden taking charge of Insane Asylum.
- B. Medical School for Women opened at Canton.
 First class of Medical Department, St. John's, Shanghai, graduating; Drs. Jefferys and Stevens joining the staff. Training of nurses begun.
 Session of the Nomenclature Committee of the China Medical Missionary Association. Lists of medical terms published.
- C. Door of Hope opened at Shanghai.
 Dr. Emily D. Smith takes charge at Ing-hok.
 Catholic Jentseutang reopened at Peking.
 German Military Dispensary established at Peking, soon taken over by Dr. Cochrane.
 Dr. J. L. Maxwell arrives at Tainan.
 Rankine Memorial Hospital opened at Ichang.
 Dr. Peck commences work at Paotingfu.

- Missionary hospital built at Anking.
 Women's hospital at Futsing opened.
 Dr. Osgood resumes work at Chuchow.
 Dr. Sjoqvist commences medical work at Siangyang.
 Medical missionary work at Yochow commenced.
 Dr. Keller begins medical work at Changsha.
 Faber Hospital at Tsingtao built.
 Nathan Sites Memorial Hospital at Mintsing (Fukien) opened.
 Death of the Rev. G. L. Mackay.
- D. Plague reported from Mengtsz, Lungchow, Pakhoi, Wuchow, Hongkong, Macao, Samshui, Swatow, Foochow.
 Flood, famine and typhus in Kiangsi.
1902. A. Peiyang Sanitary Service established.
 Ida Kahn begins medical work at Nanchang, Kiangsi.
- B. Medical school for women at Canton becomes Hackett Medical College; new college building and David Gregg Hospital opened.
 Army Medical College established at Tientsin.
 Regular medical instruction commenced at Hankow.
 Beginning of training of nurses at Canton, Hankow and Chungking.
- C. Hospital St. Michel and Douw Hospital opened at Peking.
 Catholic hospital opened at Chungking.
 Hospital work of Southern Presbyterians commenced at Tsingkiangpu.
 Wei-huifu missionary hospital opened.
 Dr. Beam establishes dispensary at Yochow.
 Dr. Peake begins medical work at Hengchow.
 Medical workers of the Norwegian Missionary Society arrive at Changsha.
 China Inland Mission dispensary opened at Kaifengfu.
 Dr. Samuel Cochran commences work at Hwaiyuan.
 Medical activities of the English Friends' Miss. Association begun at Tung-ch'uang.
 Dr. Ayers arriving at Hwanghien.
 Work of English Methodists transferred from Tangshan to Yungping.
 Dr. Mabel Pantin settles at Dong-kau.
 French Consular Hospital established at Yunnanfu.
 Work of the Seventh Day Baptist Mission transferred from Shanghai to Lienoo.
 Forman Memorial Hospital opened at Yeungkong.
 106 medical missionaries reported.
- D. Plague reported from Pakhoi, Hongkong and Canton, Swatow and Changpoo.
 Cholera reported from many localities in China, including Manchuria.
 Scarlet Fever recorded from Shanghai.
1903. A. Fukien Medical Association organised.
 New building of Health Department, International Settlement, Shanghai, comprising laboratory opened.
- B. North China Educational Union formed at Peking.
 Chinese Peking Medical College organised.
 Aurora University established at Shanghai.
- C. St. Elizabeth's Hospital opened at Shanghai.
 Drs. G. D. Whyte and R. E. Worley appointed to Swatow.
 Hopkins Memorial Hospital and German military hospital opened at Peking.
 Dr. P. Anderson transferred to Takow.

- New hospital for lepers opened at Hangchow.
 Missionary hospital for women established at Wuchang.
 Up-to-date hospital opened at Changteh.
 French Government Hospital established at Mengtsz.
 Dr. Cox appointed to Renshou.
 Dr. Kelly commences work at Chenchow.
 Roberts Memorial Hospital opened at Ts'ang-chou.
 Chinese Engineering and Mining Co. founds hospital at Chinwangtao.
 Dr. Ram Lal Sircar appointed Customs Medical Officer at Tengyueh.
1904. D. Plague reported from Hongkong, Canton, Swatow, Amoy, Foochow, Peitang.
 Cholera reported from Lungchow, Amoy, Shanghai.
- A. Red Cross work instituted to assist the victims of the Russo-Japanese war.
 Quarantine regulations for Hankow promulgated.
- B. South China Medical College opened at Canton.
 Christian Association of Pennsylvania University establishes medical department in connection with Canton Christian College.
 'Peripatetic' classes begun as forerunner to Tsinanfu Union Medical College.
- C. Dispensary for Chinese opened at Lingnan.
 Dr. Davenport takes charge of Shantung Road Hospital, Shanghai.
 New building for St. Luke's Hospital, Shanghai, opened.
 Isolation Hospital, Disinfection station and mortuary established in Shanghai International Settlement.
 Alice Memorial Maternity Hospital opened at Hongkong.
 Catholic Hospice of Tung Tang opened at Peking.
 Dr. Charles W. Young appointed to Peking.
 Dispensary work of Southern Baptists commenced at Yangchow.
 Hospital for women established at Tsinanfu.
 New hospital for men opened at Tungkun.
 Stout Memorial Hospital inaugurated at Wuchow.
 Dr. Jenkins arrives at Sian.
 Dr. Nilssen begins work in Iyang.
 Medical activities of Church Missionary Society commenced at Lanchow.
 Missionary dispensary opened at Runingfu.
 Hospital at Tiehling (Manchuria) opened.
- D. Plague reported from Hongkong, Swatow and district.
 Cholera reported from Chungking.
1905. A. Central Sanitary Department established at Peking under the Ministry of Police.
 Pakhoi Sanitary Department inaugurated.
 Conference of the China Medical Missionary Association at Shanghai.
 New Bacteriological Institute opened at Hongkong.
 Tsinanfu Institute opened.
- B. China Medical Missionary Journal appears bi-monthly.
- C. French To Mei Hospital established at Canton.
 New hospitals for men and women opened in Laoling district.
 Chinese hospital at Pakhoi founded.
 Tungkun Leper Asylum opened.
 Dr. Greig reopens hospital at Kirin.
 Hospital of Basel Missionary Society built at Kiayingchow.
 Church Missionary Society Hospital opened at Taichowfu.
 Dr. W. E. Smith arrives at Yuinhsien.
 Menzies Memorial Hospital opened at Hwaiching.

- Work of English Methodists at Wuting commenced.
 Hospital at Chinwangtao opened by Transvaal Chamber of Mines.
 American Lutheran Mission begins work at Choshanhsien.
 Margaret Eliza Nast Memorial Hospital opened at Sing-iu.
 Dr. Layton commences work at Pochow.
 Martyrs Memorial Hospital opened at Changli.
 Hospital for Franciscan Order built at Kingchow.
 Presbyterian Church of England establishes hospital at Suabue.
 Wesleyan Mission Hospital opened at Yungchow.
 Death of Drs. Jas. Hudson Taylor and Chesnut.
 Out of a total of 3,445 missionaries—301 physicians recorded (207 men and 94 women); 166 hospitals and 241 dispensaries.
1906. D. Plague reported from Hongkong, Engch'un.
 Scarlet fever at Chinwangtao.
- A. Establishment of Ming Cheng Pu Hospitals under the auspices of the Central Sanitary Department.
 Memorial upon the opium evil presented to the Throne and edict against the abuse of the drug published.
 Sanitary regulations for the port of Tientsin adopted.
- B. Peking Union Medical College opened.
 St. John's University School of Medicine at Shanghai incorporated.
 Peking Union School for Nurses opened.
 Dr. Y. May King (Yamei Kin) opens a nursing school at Chengtu.
 Midwifery School opened at Hangchow.
- C. Kuan I and Municipal Hospitals opened at Canton.
 Hospital for mentally diseased foreigners opened at Shanghai.
 Gate School and Dispensary opened at St. John's, Shanghai.
 Dr. A. W. Tucker commences work at Shanghai.
 Ho Miu Ling Hospital opened at Hongkong.
 St. Luke's Hospital at Peking opened under Drs. Aspland and Wu.
 Dr. Hall arrives in Peking.
 Blyth Memorial Hospital opened at Wenchow.
 German Hospital opened at Chungking.
 Catholic hospital established at Sian.
 Dr. Hume begins medical work at Changsha.
 Dr. Layton commences medical work at South Tungchow.
 Faber Community Hospital (for foreigners) opened at Tsingtao.
 Alden Speare Memorial Hospital at Yenping opened.
 Father Conrady begins work for lepers leading to foundation of an asylum at Sheklung.
 China Inland Mission hospital established at Pingyangfu.
 Hugh O'Neill Memorial Hospital of the Northern Presbyterians established at Shuntehfu (Hopei).
- D. Plague reported from Hongkong and Canton.
 Cholera reported from Shanghai.
1907. A. Chinese Red Cross Society recognised by the Government.
 Conference of the China Medical Missionary Association at Shanghai (simultaneously with General Missionary Conference). Dr. Cousland appointed Chinese Editorial Secretary. Research Committee appointed under Dr. Maxwell. Name of Journal changed to China Medical Journal.
 Former Medical Missionary Society assumes name of Canton Medical Missionary Society.
- B. German Medical School opened at Shanghai.
 "Hongkong College of Medicine" admits pupils of other nationalities besides Chinese.
 Boone Medical School opened at Wuchang.
 School of Pharmacy organised at Soochow.

Chinese "Medical College" destined to teach nursing and midwifery opened at Tientsin.

- C. Dr. Hilda Margaret Byles arrives at Hankow.
Yangchow missionary hospital opened.
Up-to-date hospital completed at Mukden.
Japanese hospital opened at Newchwang.
Missionary hospital established at Engch'un.
St. James Hospital, Anking, opened.
Friends Foreign Missionary Society establish hospital at Luho.
Henrietta Bird Memorial Hospital at Paoning opened.
Danish missionary hospital established at Antung.
Chinese hospital established at Yenifu and a Japanese one in the neighbouring Lungchingtsun.
Dr. Tatchell commences dispensary work at Tayeh.
American Baptist hospital opened at Hanyang.
Dr. Kirk commences medical activities at Kongchuen.
Death of Dr. Sydney R. Hodge.
- D. Plague reported from Hongkong, Macao and Ti-cok.
Cholera near Pakhoi, at Wenchow, Ningpo, Shanghai, Tientsin, Tangshan, Peitaho and Chefoo.
Smallpox reported from Tengyueh.
- 1908. A. Agreement concerning opium traffic concluded between China and Great Britain.
Owing to bubonic plague epidemic isolation hospital and laboratory opened at Tangshan.
Examination of old-style practitioners at Nanking.
Waterworks opened at Canton and Chapei (Shanghai).
- B. First M.D. degrees conferred by St. John's School of Medicine, Shanghai.
Peking Union Medical College for Women opened.
Dr. Wu Lien-teh joined Govt. Service; appointed Vice-President, Army Med. College, Tientsin.
Examination of Nurses held by China Medical Missionary Association.
Training scheme for dressers adopted at Mukden.
Regular training of nurses begun at Anking, and Nanking, training of midwives at Futsing.
- C. St. Mary's Hospital, Shanghai, opened.
To K'eung Maternity Hospital founded at Canton.
Wesleyan Mission builds new hospital at Fatshan.
Dr. Phoebe Stone begins work at Kiukiang.
Dr. Morgan commences work at Haichow.
Government Hospital at Kirin opened.
Chenchow missionary hospital established.
Yale Mission hospital at Changsha opened.
Dr. Whitney transfers his activities to Yungfun.
Missionary hospital work at Nanchang begun.
St. Andrew's Dispensary founded at Wusih.
Death of Miss Zoh Foh Mei.
- D. Plague reported from Hongkong, Amoy, among rats in Shanghai and at Tangshan (see above).
Cholera at Kongmoon, Chinkiang, Nanking, Hankow, Ichang (Dr. Stooke died) and Chungking.
- 1909. A. Nurses' Association founded.
First Chinese nurse (Miss E. Mawfung Chung) graduates abroad.
French Bacteriological Institute founded at Chengtu.
- B. Imperial edict concerning foundation of Medical Colleges published.
Preparatory class of University Medical School, Canton, opened.

- Kung Yee Medical College founded at Canton.
 Work of Hankow Union Medical School begun.
 Soochow medical school for men closed.
 Tsinanfu Union Medical College founded.
 Premedical course at Shanghai Aurora University started.
 Missionary medical school established at Taichowfu.
 Florence Nightingale Nurses' Training School opened at Foochow.
- C. Leung Thet Dispensary founded at Canton.
 Hospital for Chinese police and prisoners built at Shanghai.
 Chinkiang Railway hospital opened.
 St. Agatha's Hospital for women established at Pingyin.
 Hospital for foreigners opened at Kuling.
 London Missionary Society Hospital opened at Tingchow, Fukien.
 Hospital of the Seventh Day Adventists established at Yenching.
 S. Baptist Hospital founded at Chengchow, Honan.
 Death of Dr. Paulun, Shanghai.
- D. Plague reported from Bhamo, Canton, Hongkong, Swatow, Amoy, Hankow and among rats in Shanghai.
 Cholera reported from Amoy, Soochow, Chefoo, Dairen and other localities in Manchuria and Korea.
 Scarlet fever at Changsha.
- 1910.
- A. Red Cross Associations founded at Canton.
 Conference of the China Medical Missionary Association at Hankow. Committee of Medical Propaganda appointed.
- B. East China Union Medical College established at Nanking.
 First regular class admitted to Tsinanfu Union Medical College.
 Nurses' examination held at Hanyang.
 Class of nursing commenced at Futsing.
- C. Kwong Wa, Wa Tsai Maternity and Foo Ue Maternity Hospitals opened at Canton.
 Shanghai Public Hospital founded.
 Military dispensary established at Foochow.
 Hospital at Tengchow provided by Mr. L. Severance.
 French hospital opened at Hoilhow.
 Catholic hospital established at Lao-ho-kow.
 Modern hospital opened at Hwaiyuan.
 Tangshan laboratory transferred to Chinwangtao.
 Medically trained Father takes charge of Kingchow hospital.
 Retirement of Drs. Boone and P. Anderson.
 Death of Dr. Riddell.
- D. Beginning of Manchurian Pneumonic Plague Epidemic. Dr. Wu Lien-teh sent to Harbin by Imperial Gvt. to investigate.
 Plague also reported from Pakhoi and Linchow, Hainan, Canton, Hongkong, Swatow, Amoy and Shanghai (few cases).
 Cholera reported from Lungchow, Swatow, Chinkiang, Hankow, Ichang (Matron Minnie Bere died) and Dairen.
 Famine, typhoid and typhus at Chinkiang.
- 1911.
- A. Chinese Revolution. Red Cross activities begun during Civil War.
 Termination of 1910-11 Manchurian Pneumonic Plague epidemic.
 International Conference convoked by Chinese Government at Mukden (April 1-30).
 Health Department and dispensary for treatment of infectious cases inaugurated at Foochow.
- B. First medical class taught in Canton University Medical School.
 Foochow Medical School founded.
 First graduation, Peking Union Medical College.
 Japanese medical school opened at Mukden.
 Preliminary medical teaching begun at Tsingtao.

Private medical school opened at Nantung.
 Medical training commenced in the newly-opened Tzeki hospital.
 Training of nurses begun in the newly-opened modern hospital
 of Kung Yee Medical School at Canton.

- C. Tsan Yuk Hospital founded at Canton.
 New building of Shanghai Red Cross Hospital opened.
 Chekiang Hospital established at Hangchow.
 Canadian Methodist hospital opened at Chengtu.
 Catholic dispensary and hospice established at Changchun.
 Tisdale Memorial Hospital opened at Chuchow.
 Chinese hospital and new missionary hospital inaugurated at
 Antung.
 Two foreign hospitals established at Nanning.
 Japanese hospital founded at Hunchun.
 Dr. Woodhull retiring.
 Death of Dr. G. A. Stuart.
- D. Plague reported from Pakhoi, Hongkong, Swatow, Chao-yang and
 Chaochowfu, Amoy and Shanghai.
 Cholera reported from Swatow.
 Smallpox reported from Ichang, Changsha, Tengyueh.
 Influenza reported from Changsha.
1912. A. Manchurian Plague Prevention Service founded (October).
 Health Commissioner appointed at Canton. Manufacture of small-
 pox vaccine commenced.
- B. Standard curriculum for medical schools referring particularly to
 Medical Special Colleges promulgated by Central Government.
 South China Medical College Canton closed.
 Amalgamated St. John's and Harvard Medical Schools opened at
 Shanghai.
 Hongkong Medical School taken over by newly-opened University.
 Official status given to Chinese Peking Medical Special College.
 Medical Special School opened at Hangchow.
 Medical course at Shanghai Aurora University started.
 Military Veterinary School established at Paotingfu.
 Systematic training of nurses begun at Canton Missionary hospital.
 Maternity Training School, in connection with the newly-opened
 Marion Barclay Hospital at Kongmoon, established.
- C. Municipal hospital installed at Ningpo.
 International hospital opened at Hankow.
 Dispensary established by Chinese Independent Church at Tsinanfu.
 South Manchurian Railway Hospital completed at Antung.
 Dr. Kahn establishes hospital for women and children at Nanchang.
 Chinese Government Hospital opened at Tsitsihar.
 Nantung(chow) Christian Hospital established.
 Northern Presbyterians open hospital at Tenghsien, Shantung.
 Death of Dr. Gaynor.
- D. Plague reported from Pakhoi, Hainan, Canton, Hongkong, Macao,
 Swatow, Amoy, Shanghai.
 Cholera reported from Hainan, Hongkong, Amoy, Swatow, Shang-
 hai, Nanking, Kiukiang, Hankow, Changsha.
 Typhus, relapsing fever and smallpox reported from Hangchow.
 Smallpox reported from Wuchow.
1913. A. Indian Government stops sale of opium to China.
 Chinese Medical Association established at Peking.
 Conference of the China Medical Association in Peking.
 Mr. Charles Eliot visits China on behalf of the Carnegie Peace
 Foundation.

- B. Presidential mandate legalising the dissection of dead bodies promulgated.
 Harvard Medical School, Shanghai, concludes new agreement with Chinese Red Cross Hospital.
 Medical Special College established at Soochow, soon followed by Nanchang Public Medical College and Wuchang Medical Special College.
 Organisation of Hunan-Yale College of Medicine begun and preliminary teaching started at Changsha.
 Training of nurses commenced at Soochow, Chengtu and Changsha. 500 medical students reported in training under missionary auspices.
- C. Catholic hospital for foreigners and dispensary for Chinese founded at Shanghai.
 New American Presbyterian Hospital built at Tengchow.
 Hospital of Norwegian Lutheran Mission opened at Lao-ho-kow.
 New hospital of the American Missionary Covenant built at Siangyang, Hupeh.
 Quarantine hospital built at Chinwangtao.
 Liebenzell Mission hospital opened at Hungkiang (Hunan).
- D. Plague reported from Pakhoi, Hongkong, Canton, Swatow, Amoy, Shanghai.
 Cholera reported from Canton, Foochow, Hankow and Changteh.
 Typhus and scarlet fever at Hangchow.
- 1914. A. Rockefeller Foundation sends Commission to China to study medical conditions and establishes China Medical Board.
- B. Franco-Chinese Medical School founded at Canton.
 Army Medical College, Canton, closed.
 Agreement concluded at Shanghai leading to formation of the Pennsylvania Medical School as the Medical Department of St. John's University.
 Union Medical College, Foochow, formed.
 First graduation Peking Union Medical College for Women.
 First graduation Tsinanfu Union Medical College.
 Work of Medical Faculty, Chengtu University, commenced.
 New agreement concluded in regard to the Hunan-Yale College of Medicine.
 National Conference of Nurses held at Shanghai and registration certificates granted to standard nursing schools.
 Training of nurses begun in connection with the Harvard Medical School, Shanghai, and the newly-opened Temple Hill Hospital, Chefoo.
- C. Hospital at Hongkong opened by Catholic Sisters of St. Paul of Chartres.
 Dojin Hospital opened at Peking.
 Dr. Hannestad arrives at Kaigan.
 Catholic hospital opened at Wenchow.
 New hospital established at Kuling with special accommodation for tubercular patients.
 Catholic Hôpital du Bon Pasteur opened at Harbin.
 Medical work of English Presbyterians commenced at Shanghang.
 Hospital at Dionghoh, Fukien, opened.
 Missionary hospital built at Yuinhsien.
 Dr. Swan retires from Canton Missionary Hospital.
 Death of Sir Ho Kai and Dr. H. Wenham.
- D. Plague reported from Pakhoi, Hongkong, Canton, Shiuhing, Swatow, Amoy, Foochow, Shanghai.
 Cholera reported from Wuchow and Shanghai. Cases also reported from Hongkong, Canton, Nanking, Hankow and Chaochowfu.
 Smallpox reported from Wuhan district.

- 1915.
- A. Western medicine recognised as standard for Government employment.
Regulations concerning trade with drugs and the Red Cross promulgated.
National Medical Association of China founded and National Medical Journal appears.
Conference of the China Medical Missionary Association at Shanghai.
Council on Public Health created.
Isolation hospitals opened at Peking and Tsingtao.
 - B. China Medical Board assumes full support of Peking Union Medical College. Second Rockefeller Commission comes to China.
Tientsin medical school taken over by Ministry of the Navy becomes Naval Medical College.
Nurses' Association holds first examination.
Training of nurses started in the Hopkins Memorial Hospital, Peking, and the Tsinanfu University Hospital.
23 medical missionary schools reported with 238 male and 67 female students, 36 nursing schools with 272 students.
 - C. German hospital for Chinese patients established at Peking.
New Leper Asylum opened at Hangchow.
Buchanan Hospital for women and children of the Church of Scotland Mission opened at Ichang.
Westminster Sunday School Hospital at Changteh completed.
Catholic hospital opened at Kashing.
Work of American Baptists and Methodist Episcopalians (South) at Huchow amalgamated and new General Hospital opened by the latter.
St. Paul's Hospital established at Kaifengfu.
British medical missionary stationed at Yunnanfu.
Work for lepers commenced at Yeungkong.
Hospital at Tengyueh opened under Dr. Sircar.
Private Japanese hospital founded at Shasi.
Hospital of the Friends Missionary Association opened at Sui-ning.
Protestant statistics:—277 foreign men, 106 foreign women, 119 Chinese physicians, 509 Chinese medical assistants, 142 foreign and 734 Chinese nurses. 330 hospitals with 13,455 beds, 223 dispensaries treating over 1½ million individuals.
 - D. Plague reported from Pakhoi, Hongkong, Swatow, Amoy, Yungchun, Shanghai (1 case).
Cholera reported from Pakhoi, Hongkong and Wuchow.
Smallpox reported from Wenchow.
Scarlet fever reported from Kaifengfu, diphtheria, scarlet fever and influenza from Chinkiang.
- 1916.
- A. Regulations concerning the prevention of infectious diseases promulgated.
Attempt to make vaccination compulsory at Peking.
First Conference of National Medical Association at Shanghai.
Joint Council on Public Health Education and Kiangsu Public Health Association formed.
 - B. Regulations for medical and pharmaceutical examinations promulgated.
Conference on Chinese Terminology held at Shanghai.
Harvard Medical School, Shanghai, closed.
School in connection with Kashing Hospital established.
First medical class Hunan-Yale School formed.
 - C. Canton Medical Missionary Union takes over the Canton Hospital.
Metropolitan Hospital opened at Peking.
New missionary hospital opened at Linch'ingchow.

Hospital of Seventh Day Baptist Mission built at Linho.
 Civil hospital opened at Tsingtao.
 Missionary hospital and branch of Government Hospital opened at Lungchingsun.
 Missionary hospital established at Liling.
 Chinese hospital at Pingwu opened.
 Hospital of the Evangelical Association of North America opened at Tungjen, Kweichow.

- D. Plague reported from Hongkong, Canton, Chaochowfu, Amoy.
 Cholera reported from Pakhol, Nanning, Hongkong, Canton, Macao, Shanghai and Japan.
 Smallpox reported from Hongkong, diphtheria reported from Honan, Changsha, Ningpo (there also scarlet fever).
1917. A. Medical Terminology Association officially recognised. Two further Conferences on Terminology held.
 Joint Conference of the two Medical Associations held at Canton.
 Public free vaccination offered at Wenchow.
- B. Pre-medical school of the Peking Union Medical College opened.
 Dental Training School in connection with the Hopkins Memorial Hospital at Peking established.
 Medical Department of Nanking University transferred to Tsinanfu.
- C. Amoy Chinese hospital destroyed by typhoon.
 Military hospital established at Amoy.
 Dr. Bell replaces Dr. Woods at Tsingkiangpu.
- D. Onset of 1917-18 Shansi Epidemic. Plague also reported from Hongkong and Amoy.
 Smallpox reported from Hing (Kweichow), Shanghai and Antung.
 Scarlet fever and diphtheria reported from Soochow, Chinkiang, Nanking, Shansi, scarlet fever from Hangchow and Hsuehchowfu.
1918. A. Moral Welfare Committee organised at Shanghai.
 Soochow Medical Society founded.
- B. Terminology Conference held at Shanghai.
 Tung Teh Medical School, Shanghai, founded.
 Army Medical College transferred to Peking, Hankow Union Medical College to Tsinanfu.
 Hangchow Medical School recognised by Board of Education.
 Dental training started in the West China Union University, Chengtu.
 Nurses' Association begins publication of quarterly newsletter.
 Systematic training of male nurses begun at Nanking.
- C. Amoy Hakuei and Hui Ch'un Lu Hospitals opened.
 Red Cross hospitals opened at Ningpo and Wanhsien.
 Sanitarium of the Seventh Day Adventists founded at Shanghai and Maternity block added to the Victoria Nursing Home.
 Central Hospital, Peking, opened.
 Missionary General Hospital established at Wuchang.
 Dr. Seymour transferred to Tsinan.
 Tsinan I Yuan opened at Tsinanfu.
 New hospital at Changsha opened.
 Catholic dispensary opened at Yeungkong.
 Changchow General Hospital established.
 Foundation of the Chih Teh Hospital, Soochow, the Chachien General Hospital and the Pao Hsin Hospital, Tientai, Chekiang.
- D. Plague reported from Hongkong.
 Smallpox reported from Nanking.
 Influenza reported from numerous localities.

- Typhus reported from Mengtsz, Koku, Weihaiwei (Dr. A. K. Baxter died).
 Meningitis reported from Hongkong and Yangtse ports.
 Scarlet fever reported from Ningpo, Diphtheria from Shaoshing.
1919. A. Central Epidemic Prevention Bureau established at Peking.
 Measures against importation of infectious diseases taken at Hangchow.
 Burning of opium at Shanghai and foundation of International Anti-opium Associations.
 Industrial specialist sent to China and Industrial Hospital founded at Shanghai.
 Vice Committee instituted at Shanghai.
- B. Terminology Conference at Shanghai.
 Medical school of Peking Union Medical College begun.
- C. Tung Teh Hospital opened at Shanghai.
 Chinese hospital for women and children founded at Wuhu.
 Wenchow and Yu Wen Hospitals opened at Wenchow.
 Public hospital at Kweiyangfu inaugurated.
 First part of Stout Memorial Hospital, Wuchow, completed.
 Susan Toy Ensign Hospital started at Nanchang.
 Swedish Missionary hospital opened at Shasi.
 Leper work at Tenghsien started.
 Retirement of Dr. Swallow, death of Drs. Logan, So To-meng and Swan.
- D. Plague reported from Hongkong.
 Cholera reported from numerous localities; reaches Manchuria.
 Smallpox reported from Ichang.
 Meningitis reported from Anhwei.
 Influenza reported from Antung.
1920. A. Municipal Health Department established at Canton.
 Hangchow public health activities begun and health campaign conducted at Foochow.
 Joint medical conference at Peking.
 Anatomical and Anthropological Association of China founded.
 Commission of British National Council for Combating Venereal Diseases visits Shanghai.
- B. Yunnan Army Medical College founded.
 Nurses' journal (in Chinese and English) started.
 Peking Union Medical School of Nurses opened.
 School of Nursing opened at the Margaret Williamson Hospital, Shanghai.
- C. Chinese Infectious Diseases Hospital and Summer Diseases Hospital opened at Shanghai.
 Dr. Stone comes to Shanghai where she founds Bethel Mission.
 Chung Hsih Hospital opened at Hankow.
 First part of missionary hospital opened at Yunnanfu.
 Tai-kam Leper Colony founded.
 Elizabeth H. Blauvelt Memorial Hospital erected at Tungan.
 250 Missionary hospitals reported to exist.
- D. Onset of 1920-21 Manchurian Pneumonic Plague Epidemic. Plague also reported from Hongkong.
 Cholera still reported from several localities.
 Great famine in North China.
 Meningitis reported from Anhwei, Kashing and Anking.
 Fatal epidemic (? influenza) reported from Suchien (Kiangsu).
 Influenza, diphtheria and scarlet fever reported from Taikuhsien (Shantung).

1921. A. National Health Association founded.
 Dr. Fowler appointed Secretary of the International Mission to Lepers for Eastern Asia.
 Shanghai Medical Society founded.
 Department of Public Health Service instituted in connection with Canton Missionary Hospital and Purity Campaign started at Canton.
 Health Education campaign in Peking Colleges inaugurated.
- B. Formal opening of Peking Union Medical College.
 Reorganisation of Tung-chi (German) Medical School at Shanghai.
 Soochow Medical School for Women transferred to Shanghai.
 Hopei University Medical College opened at Paotingfu.
 Kiangsi Provincial Special Medical School opened at Nanchang.
 Union Training School for Women Nurses opened at Shanghai.
 Terminology Conference at Nanking.
- C. New Japanese hospital established at Tsingtao.
 Catholic dispensary work commenced at Hanyang.
 Shekki dispensary opened.
 Regular work at Yuhsien begun in the Emma M. Dubs Memorial Hospital.
 Hospitals opened at Shihkiachwang (Hopei), Jukao (Public Hospital), Tingchow (Hopei), and Tungtaihsien (Kiangsu).
- D. Plague reported from Hongkong.
 Cholera reported from Yochow, Shanghai, Nanking, Antung.
 Smallpox reported from Wenchow, Shanghai and Ichang.
 Scarlet fever reported from Shanghai, Antung, Diphtheria reported from Wenchow.
1922. A. Dr. F. Norman White undertakes on behalf of the L.O.N. an enquiry into quarantine work in the Far East.
 Conference of the National Medical Association at Shanghai.
 Conference of the Nurses' Association held at Hankow and General Secretary appointed.
 Peking Branch of Society of Experimental Biology and Medicine organized.
 Health campaigns at Shanghai, Soochow and Nanking.
 Public Health Association founded at Soochow.
 Health campaign in Shansi Province.
 Health Centre created at Changsha.
- B. Union Medical College, Foochow, closed.
 Terminology Conference held at Shanghai.
 Training School for nurses at Shanghai Red Cross Hospital reopened.
 School for female nurses formed in connection with newly-opened Soochow Hospital.
- C. American Church Mission hospital opened at Changshu.
 Opening of the Wu Hsing Hospital at Huchow, Hingkingfu Christian Hospital (Manchuria), Hsing Jen Hospital at Hinghwa.
 Dr. Neal retires.
 Death of Sir Patrick Manson and Dr. Andrew Young, Tsinanfu.
- D. Plague reported from Hongkong.
 Cholera reported from Honan Province, Shanghai, Wuchang.
 Diphtheria reported from Shansi, Smallpox reported from Wuhu.
1923. A. Conference of China Medical Missionary Association at Shanghai.
 Council on Health Education reorganised.
 Field study of Kala-azar under Dr. C. W. Young commenced.
 Pasteur Institute opened at Tientsin.
 Free Municipal Clinic for Venereal Diseases opened at Shanghai.

- B. Kung Yee college at Canton becomes University Medical School.
Peking Union Medical College for Women transferred to Tsinanfu.
Pre-clinical work of Tung-chi medical school transferred to Woosung.
- C. Dispensaries in connection with the Canton Christian College at Lingnan opened.
New buildings erected for the German Hospital at Peking.
Buildings for female lepers opened at Hangchow and Tenghsien.
New hospital for women built at Shaowu.
Stout Memorial Hospital at Wuchow completed.
Hospitals opened at Weihwei, Pingtingchow, Tatungfu (Mosse Memorial), Kweiteh, Honan (St. Paul's), Taichowfu (Linhai Hosp.).
Drs. Christie and McPhun retiring.
Death of Dr. Parrott.
- D. Plague reported from Hongkong, Canton, Yenping.
Cholera reported from Shanghai.
Smallpox reported from Hongkong, Canton, Wuchang.
Scarlet fever reported from Peking, scarlet fever and diphtheria from Shanghai.
Non-virulent influenza throughout China.
- 1924. A. Conference of the National Medical Association at Nanking.
Conference on School Health.
China Hookworm Commission formed.
Child Welfare Clinic opened at Canton.
- B. Woman's Christian Medical College and Nanyang Medical School opened at Shanghai.
New building for Hangchow Medical School opened.
Canadian charter granted to School of Medicine, Shantung Christian University, Tsinanfu.
Atherton Building for Biology and Preventive Medicine finished at Chengtu.
Japanese medical school opened at Tsingtao.
- C. North-Eastern Hospital opened at Mukden.
German Hospital established at Tsinanfu.
Antung Quarantine Hospital opened.
Hospitals opened at Jukao, Mienchuhsien, Loyang.
Death of Dr. Whitney.
- D. Hongkong free from plague. Outbreak reported from Shanghai.
Sporadic cholera reported from Shanghai and a few other localities.
Smallpox reported from Hongkong and Shanghai, Scarlet Fever from Tsunhua.
- 1925. A. Health Demonstration inaugurated at Peking.
Far-Eastern Epidemiological Bureau of the League of Nations established at Singapore.
Dr. Rajchman, Medical Director of the L.O.N., visits Peking.
Joint Conference of the China Medical Missionary Association and British Medical Association held at Hongkong. Former becomes China Medical Association.
China Foundation for the Promotion of Education and Culture organized.
- B. Institute of Hospital Technology opened at Anking.
- C. Proper dispensary at Lingnan formally opened.
Swarthmore dispensary opened at Shanghai.
Goldsbury King Memorial and Hong Jen Hospitals opened at Chin-kiang.
Scientific treatment of lepers commenced at Tsinanfu.
Medical work of American Baptists begun at Fuchiatien (Harbin).
Shekki Hospital opened.
Death of Dr. Boone.

- D. Plague reported from Pakhoi.
Cholera reported from Swatow, Shanghai, Soochow, Changchow, Nanking and Yunnanfu.
Smallpox reported from Ichang and Kiulungkiang*.
- 1926. A. Department of Health, Port of Shanghai and Woosung, instituted.
First registration of medical practitioners in Greater Shanghai.
Chinese Mission to Lepers organised.
Conferences of the National Medical Association at Shanghai and the China Medical Association at Peking.
Chinese Physiological Society founded.
Treatise on Pneumonic Plague by Wu Lien-teh published.
- B. Tungnan Medical School founded at Shanghai.
- C. Canton Missionary Hospital temporarily closed.
Health Service organised in Yenching Rug Factory, Shanghai.
Country Hospital opened at Shanghai.
Temporary Red Cross Hospital opened at Peking.
Min Sheng Hospital opened at Ho-fei (Anhwei) and Pu Chi Hospital established at Changshu.
Retirement of Dr. Duncan Main.
Death of Drs. Thomson, Davenport and Pantin.
- D. Cholera widespread in China, invading Manchuria.
Typhus reported from Peking, Typhoid from Siningfu, Smallpox from Ichang.
- 1927. A. Health campaign at Canton, Amoy, Hongkong, Swatow and Foochow.
Health Demonstration Centre at the Margaret Williamson Hospital and Baby Clinic at Chapei, Shanghai, established.
Maternity Clinics organized at the David Gregg Hospital, Canton.
- B. Medical Department of First Chungshan University opened at Canton.
College of Medicine, National Central University, organized at Shanghai.
Medical Department of National University of Peiping instituted.
Hangchow Medical School closed.
Work of the Hsiang-Ya Medical College at Changsha temporarily suspended.
Foundation of Harbin Medical School.
Pharmacy School of the Peiping Municipal Health Bureau opened.
- C. Kiangyin Lun Yuan opened.
Retirement of Dr. Fowler, death of Drs. Guinness, J. S. Grant and Jeannie I. Dow who had established soon after the Boxer uprising a Woman's Hospital at Changte (Honan).
- D. Cholera reported from Shanghai and Hinghwa.
Famine, typhus and some cholera at Sianfu.
- 1928. A. Ministry of Health established at Nanking (October).
Sanitary Code and Regulations for Registration promulgated.
Health Department and Midwifery Commission established at Peiping.
Municipal Health Work started at Nanking under the Dept. of Public Safety.
National Child Welfare Association of China established.
Health Demonstration Station founded at Woosung and new Chapei Waterworks opened.
Waterworks opened at Amoy and health campaign conducted.
National Medical Association Conference at Peking.
- B. Committee to study Medical Education problems appointed.
New China Medical Board instituted.

* For comprehensive information on the incidence of communicable diseases in China during 1925 and 1926 see Tsefang F. Huang, Nat. Med. J., 1927, p. 92.

- Chinese Red Cross Hospital at Shanghai becomes teaching establishment.
 Training of old-style midwives started at Peiping.
 Hsiang-Ya School of Midwifery founded.
- C. Shanghai Sanitarium, Orthopedic Hospital and International Institute Hospital opened at Shanghai.
 Tung Wah Eastern Hospital opened at Hongkong.
 Feng Yi Hospital established at Nanking.
 Leper Colony at Kiulungkiang opened.
 First eye clinics of International League for the Prevention of Blindness in China opened at Tientsin.
 Catholic dispensary for women and children established at Pengpu.
 Hospitals opened at Huangai near Taichow and Lanchi (Chekiang).
 Death of Dr. McCartney.
- D. Plague reported from Shansi and Tungliao district of South Manchuria, 4 cases at Hongkong.
 Cholera reported from Shanghai (slight) and sporadic cases from some other localities.
 Smallpox reported from Kiayu near Wuchang.
1929. A. Health Conventions held by the Ministry of Health, Nanking.
 Central Hygienic Laboratory established at Shanghai.
 National Midwifery Board organised and Provincial Midwifery School established in Kiangsi.
 Sanitary Mission of L.O.N. (Drs. Rajchman and Boudreau) arrives at Shanghai.
 Conference of Joint Commission on School Health held at Nanking and school health work started in Greater Shanghai.
 Joint Commission on Industrial Health constituted.
 Tingsien Rural Health Service started. Foundation of a Public Health Station at Kaochiao (Shanghai) and a Child Health Station at Peiping.
 West Lake Exposition at Hangchow with health exhibits.
 China Medical Association Conference at Shanghai.
 Medical Federation of China founded.
 Chinese Society of Microbiology organized.
- B. National Commission on Medical Education constituted.
 First National Midwifery School opened at Peiping.
 Honan University College of Medicine opened at Kaifeng.
 Pharmacy schools opened in connection with the Sino-French University at Shanghai and the Cheloo University Medical School at Tsinanfu.
 New Institute for Hospital Technology opened at Hankow.
- C. Work of Canton Missionary Hospital resumed.
 New Metropolitan Hospital, Peiping, opened.
 Opening of the Provincial Hospital at Chinkiang.
 New building for the Mackenzie Memorial Hospital at Tientsin opened.
- D. Plague reported from Hinghwa (Fukien Province) and Tungliao district.
 Cholera reported from Hinghwa, Shanghai and several of the coastal towns of South China especially.
1930. A. Conference of the National Health Board held at Nanking.
 Chinese Pharmacopoeia I 1930 adopted.
 National Quarantine Service (Director Dr. Wu Lien-teh) instituted (July 1). Port of Shanghai taken over from Customs.
 L.O.N. sends Drs. Stouman, Gautier, Park and Borcie to China.
 Ministry of Health abolished and replaced by National Health Administration under Ministry of Interior.

- Regulations on Importation of Syringes and Patent Medicines promulgated.
 School health work instituted at Nanking.
 National Medical Association Conference and Conference of the Nurses' Association held at Shanghai.
 West China Council on Health Education founded.
 Peiping Committee on Maternal Health formed.
- B. Meeting of Joint Commission on Medical Education.
 Dr. Knud Faber of the L.O.N. studies and reports upon medical education.
 Peiping Union Medical College registered by the Ministry of Education.
 Private Dental School opened at Shanghai.
- C. Central Hospital opened at Nanking.
 Canton Missionary Hospital transferred to Directors of Lingnan University.
 Hongkew General Dispensary taken over by Chinese Mission to Lepers.
 Shanghai Sanitarium Clinic opened.
 McCandliss Hospital erected at Hoihow.
 Deaths of Drs. Cousland, Voon-ping Yu and Thos. H. Coole (1907-22 at the Wiley General Hospital, Kut'ien, then at Foochow).
- D. Plague reported from Tungliao district.
 Cholera reported from Shanghai (127 cases with 16 deaths, mortality 12.6 per cent).
1931. A. Three Year Program of National Health Administration reported to Health Committee L.O.N. (May). Central Government appropriates three million dollars for health work annually.
 Central Field Health Station, Nanking, commences work.
 National Quarantine Service takes over Ports of Amoy (January), Hankow (August), Newchwang and Antung (October).
 Rural health services started at Wanping and Tangshan.
 Medical Board created in Shanghai International Settlement.
 Veterinary Service instituted in Shanghai International Settlement.
 National Medical and China Medical Associations decide to amalgamate as from April, 1932.
- B. Hopei Provincial Medical College established at Hsikuan.
- C. Modern Naval Hospital built at Kiangnan (Shanghai).
 New Lester Chinese Hospital opened at Shantung Road, Shanghai.
 Deaths of Drs. McCandliss and Ida Kahn.
- D. Stupendous Flood Disaster in Yangtse Valley (August). National Government organizes medical relief which checks inroads of cholera, dysentery, typhoid and typhus. Foreign nations contribute personnel and medical supplies.
 Serious outbreak of bubonic plague in Shansi and Shensi (20,000 victims). Plague outbreak near Amoy.
 Extensive anti-cholera campaign in Shanghai. Over 700,000 vaccinated. Mild cholera outbreak (482 cases with 57 deaths, mortality 11.8 per cent).
1932. A. National Medical and China Medical Associations amalgamate into Chinese Medical Association (April).
 First Conference of the amalgamated Chinese Medical Association (membership 1,200) convened at new Lester Institute, Sept. 28.
 Rural Health Service of the Central Field Health Station instituted. Rural Field Health Stations established at Hsishan, Lungshan, Taihsien, Wukang, Canton.
 United Bureau of Summer Epidemics Prevention organized at Nanking.

- National Quarantine Service takes over stations at Tientsin, Chinwangtao, Tangku and Taku.
 National Leprosy Conference held at Shanghai.
 Public Health Club at Shanghai and Chinese Ophthalmological Society at Peiping founded.
 Lester Institute of Medical Research and Institute of Legal Medicine opened at Shanghai.
 History of Chinese Medicine (Wong & Wu) published.
 Death of Dr. Houki Hu, Commissioner of Health, Greater Shanghai, who is succeeded by Dr. Li Ting-an.
 Attack of Japanese army, aerial and naval forces upon Chapei, Hongkew and Woosung districts of Shanghai (Jan.-March). \$120,000,000 of property (including many medical institutions) destroyed by bombs and shelling besides 12,000 civilians killed and wounded. Excellent relief work started by Chinese and foreign medical institutions.
- B. First issue of joint Chinese Medical Journal (January).
 Shantung Provincial Special Medical School established at Tsinanfu.
 Department of Pharmacy opened in connection with the West China University, Chengtu.
 Central School of Nursing opened at Nanking.
- C. Isolation Hospital opened at Nanking.
 Chinese Red Cross new premises opened at Shanghai.
 Hua Lien Hospital opened at Shanghai.
 Yin Chi Hospital, Ningpo, and Salvation Army Hospital, Tingshien (Hopei), opened.
- D. Limited plague outbreak in the Nungan area of South Manchuria.
 Widespread cholera epidemic at Shanghai, Kashing, Ningpo, Nanking, Wuhu and other Yangtse ports, as well as Canton, Swatow, Amoy, Hongkong, Tientsin, Tangku, Peking, Dairen, Newchwang, Harbin and interior provinces like Shansi, Shensi, Suiyuan, Honan, etc. 100,000 cases (32,000 fatal).
 Smallpox epidemic in most parts of China during winter months (Jan.-March), particularly severe in Amoy where 125 cases were treated in Quarantine Hospital isolation wards.
1933. A. Division of Industrial Hygiene of the Central Factory Inspection Bureau created.
 Highway Health Service inaugurated.
 Public Health Station at Woosung and Second Public Health Station at Peiping opened.
 Rural Public Health Stations installed at Hohsien, Hsiahsien, Yencheng, Kiangnin-chen, Wuhsing.
 New building of the Central Field Health Station in Nanking completed.
 National Anti-Tuberculosis Association and Peiping Tuberculosis Club founded. National Anti-Tuberculosis Conference held at Shanghai.
 Chinese Pathological Society founded.
 Disastrous Yellow River flood calling forth well-directed relief measures under the auspices of the National Health Administration.
- B. Yunnan University Special Medical School opened at Yunnanfu.
 Central Midwifery School at Nanking and Midwifery Training School at Hinghwa (Fukien) established.
- C. New Central Hospital and Anti-opium Hospital opened at Nanking.
 New Municipal, Psychopathic, and Chung Hua Hospitals and Hsiang Shan Sanatorium opened at Peiping.
 Ching Chong Sanatorium at Kiangwan, Shanghai, opened.
 Lunatic Asylum established at Kaifeng.
 Martyr Memorial Hospital at Wutingfu, Shantung, built.

- D. Serious plague outbreak in Tungliao and adjacent areas of South Manchuria, small outbreak of bubonic plague in Tung-an near Amoy.
Sporadic cholera cases in Nanking (1), Hankow (3), Peiping (3).
1934. A. National Bureau for Control of Narcotic Drugs established.
Provincial Bureaux of Public Health established in Kiangsi, Hunan, Shensi, Kansu, Chinghai and Ninghsia. Provincial Maternity Service instituted in Hunan.
Northwest Epidemic Prevention Bureau and Lanchow Branch of the National Epidemic Prevention Bureau established, likewise the Hangchow Field Unit for the study and prevention of parasitic diseases, the Kala-azar Research Station at Tsingkiangpu and the Nanning Bureau of Animal Husbandry.
Ninth Congress of the Far Eastern Association of Tropical Medicine and Conference of the Chinese Medical Association held at Nanking. National Conference of Child Welfare Leaders meets in Shanghai.
Planning Commission on School Health Education instituted. School health work commenced in the Shanghai International Settlement, at Nanchang, Foochow, Kaifeng, Sian and Lanchow.
Public Health Stations opened at Kiangwan and Nantao (Shanghai). Rural Health Station instituted at Chuyung.
Chinese Society of Pathology and Microbiology formed.
Nanking Waterworks opened.
- B. National Commission for Nursing Education instituted.
Hankow United Midwifery School opened.
- C. Mercy Hospital (for mental and nervous diseases) opened at Shanghai.
Hospitals for Drug Addicts start work at Shanghai and Peiping.
Opening of an Isolation Hospital and a Child Welfare Clinic at Chapei, Shanghai.
Railway Hospital established at Hangchow.
Conquest Hills Sanatorium, Peiping, founded.
- D. Serious outbreak of plague in Yenping, Fukien, lasting throughout the winter of 1934-35. Sporadic cases in Lungyen, Fukien. Limited outbreak in the Tungliao and adjacent areas of South Manchuria.
Sporadic cholera cases at Shanghai (3), Hankow (2) and Canton (1).
1935. A. National Health Administration put under the direct jurisdiction of the Executive Yuan.
Conference of the Chinese Medical Association held at Canton.
Anti-Venereal League founded at Shanghai.
Association for the Improvement of Rural Districts of Shanghai starts work.
Public Health Station at Chapei, Shanghai, opened.
- B. Medical Department of the National Central University at Nanking established.
Kwangsi Medical College opened.
Provincial Midwifery Schools established at Lanchow, Sian and Foochow.
- C. New Canton Missionary Hospital opened.
National Leprosarium at Shanghai commences work.
Birth Control Clinic at Shanghai founded.
- D. Serious plague outbreak (over 300 victims) in Lung-yen, Fukien. Bubonic outbreak in Western Sinkiang. Only few bubonic cases reported from South Manchurian focus.
Cholera absent throughout China.

- 1936.
- A. National Quarantine Service takes over Canton and Swatow stations. New premises of the Amoy Quarantine station built on New Bund.
Manual of Plague published by National Quarantine Service.
History of Chinese Medicine (Second Edition) published.
Chinese Cremation Society founded.
 - B. Kwangtung Province Army Medical College (and 800 bed hospital) opened at Canton.
Opening of New Shanghai Medical Centre occupying 100 mow of land. Buildings include National Medical College, Schools of Pharmacy and Nursing, and Chung San Hospital (500 beds).
 - C. Central Municipal Hospital opened by Greater Shanghai Municipality.
New laboratory of French Concession, Shanghai, opened.
 - D. Cholera absent throughout China.

INDICES

I.—INDEX OF GEOGRAPHICAL NAMES

NOTE:—Every attempt has been made to obtain the equivalents in Chinese characters of the names mentioned in the text. These names are frequently derived from western publications, in many of which no definite method of spelling has been adopted. Consequently a few mistakes are unavoidable.

<i>Name in</i>		<i>Province</i>	<i>Name in</i>		<i>Province</i>
<i>English</i>	<i>Chinese</i>		<i>English</i>	<i>Chinese</i>	
Albazin	雅克薩	Siberia	Chinchow	錦州	Fengtien
Amoy	廈門	Fukien	Chiningchow	濟甯州	Shantung
Ampow	蕪埠	Kwangtung	Chinkiang	鎮江	Kiangsu
Anking	安慶	Anhuei	Chinwangtao	秦皇島	Hopei
An-lu	安陸	Hupei	Choshan-hsien	柘山縣	Anhuei
An-p'u	安鋪	Kwangtung	Chuanchow	泉州	Fukien
Antung	安東	Fengtien	(Chinchiu or Chinchew)		
Ashiho	阿什河	Kirin	Chuchiachai	朱家寨	Chekiang
Batavia	巴達維亞	Java	Chuchow	滁州	Anhuei
Bukedu (Pokotu)	博克圖	Heilungkiang	Chungking	重慶	Szechwan
Canton	廣州府	Kwangtung	Chusan	舟山	Chekiang
Changchow (Chang-chia)	常州	Kiangsu	Ch'uwang	楚莊	Honan
Changchun	長春	Kirin	Dairen	大連	Fengtien
Changli	昌黎	Hopei	Danes Island		
Chang-loh	長樂	Kwangtung	Dolonor	多蘭諾爾	Mongolia
—Tsiangloh (五華縣)			Dong-kau	唐口	
Changpoo	漳浦	Fukien	Double Island	孖嶼	
Changsha	長沙	Hunan	Engch'un	永春	Fukien
Changshu	常熟	Kiangsu	Fangtze	坊子	Shantung
Changte	彰德	Honan	Fati	花地	Kwangtung
Changteh	常德	Hunan	Fatshan	佛山	Kwangtung
Changtien	張店	Shantung	Fengchowfu (Fenchowfu)	汾州府	Shansi
Chanhou	鎮口	Kwangtung	Foochow	福州	Fukien
Chaochowfu	潮州府	Kwangtung	Fuh-ning-fu (Funingfu)	福甯府 (霞浦)	Fukien
Chefoo	烟台	Shantung	Fuk-wing	福永	Kwangtung
Chenchow	辰州	Hunan	Fulaerdi (Fularki)	富拉爾基	Heilungkiang
Chenchowfu	鄭州府	Honan	Fu-mun	虎門	Kwangtung
Chengtu	成都	Szechwan	Fushan	福山	Kiangsu
Chichow	祁州	Shansi	Fushun	撫順	Fengtien
Ch'inchow	青州	Shantung			

Name in			Name in		
English	Chinese	Province	English	Chinese	Province
Futsing	福清	Fukien	Jehol	熱河	
Ganking	安慶	Anhuei	Jukao	如皋	Kiangsu
—Anking			Jenshou	仁壽	Fukien
Haicheng	海城	Fengtien	Juningfu	汝甯府	Honan
Haichow	海州	Kiangsu	Kaifengfu	開封府	Honan
Hallar	海拉爾	Heilungkiang	Kaiyuan	開源	Fengtien
Hanchung (fu)	漢中府	Shantung	Kakchieh	角石	Kwangtung
Hangchow	杭州	Chekiang	(Swatow)		
Hankow	漢口	Hupei	Kalgan	張家口	Hopei
Hantao-hotze	桃道河子	Kirin	Kaomi	高密	Shantung
(Hengtaohotze)			Kashing	嘉興	Chekiang
Hanyang	漢陽	Hupei	—Kiahsing		
Hao-shih	藕池	Hupei	Kiakhta	恰克圖	Siberia
—Tsao-shih	草市	Hunan	Kiangpu	江浦	Kiangsu
Harbin	哈爾濱	Kirin	Kiangyin	江陰	Kiangsu
Hengchowfu	衡州府	Hunan	Kiating	嘉定	Kiangsu
Hinghwa	興化	Fukien	Kiatingchow	嘉應州	Kwangtung
Hoau	荷坳		Kiehyang	揭陽	Kwangtung
Hochew	和州	Anhuei	Kien-ning	建甯	Fukien
(Hochow)			Kingchowfu	荊州府	Hupei
Hoihow	海口	Kwangtung	Kinhwa (fu)	金華	Chekiang
Hokiengfu	河間府	Hopei	Kirin	吉林	Kirin
Hok-chiang	福清	Fukien	Kiukiang	九江	Kiangsi
Honan	河南		Kiulungkiang	九龍江	Fukien
Province			Kiungchow	瓊州	Kwangtung
Hongkong	香港		Ko-chau-fu	高州府	Kwangtung
Hopo	河婆	Kwangtung	(?Kochowfu)		
Hsianfu	西安府	Shensi	Kongmoon	江門	Kwangtung
—Sianfu			Konzenchiao	拱宸橋	Chekiang
Hsiao Chang	壽張	Shantung	Kü-chao	曲周	Hopei
(?Siaochang)			Kulangsü	鼓浪嶼	Fukien
Hsiao-kan	孝縣	Hupei	—Amoy		
—Siaokan			Kuliang	鼓嶺	Fukien
Hsinchen	新登	Chekiang	Kuling	牯嶺	Kiangsi
Hsuehchow	徐州	Kiangsu	Kut-tien	吉田	Fukien
Huaich'ingfu	懷慶府	Anhuei	Kwaiping	桂平	Kwangsi
(Hwaiching)			Kwaishin	歸善	Kwangtung
Huchow	湖州	Chekiang	district		
Hupei	湖北		Kweiyangfu	貴陽府	Kweichow
Province			Kwong-ning	廣甯	Kwangtung
Hwaiyuan	懷遠	Anhuei	Lahasusu	同江	Kirin
Hwanghsien	黃縣	Hupei	Lanchow	蘭州	Kansu
Ichang	宜昌	Hupei	Lao-ho-kow	老河口	Hupei
Ichowfu	沂州府	Shantung	Laoling	樂陵	Shantung
Ing-hok	永福	Fukien	Liaoyang	遼陽	Fengtien
(Yungfu)					
Iyang	七陽	Kirin			

Name in			Name in		
English	Chinese	Province	English	Chinese	Province
Lien-cheng	連城	Fukien	Peking	北京	Hopei
Liling	醴陵	Hunan	(Peiping)	(北平)	
Linch'ing chow	臨清州	Hopei	Pengpu	蚌埠	Anhuei
Lingnan	嶺南	Kwangtung	Pingtingchow	平定州	Shansi
Litsun	季村	Hopei	Pingtu	平度	Shantung
Liuhoo	瀏河	Kiangsu	Pingwu	平湖	Chekiang
(Lienoo)			Pingyuangfu	平原府	Shantung
Loo-choo	琉球	New Japan	Pingyin	平陰	Shantung
(Liu-kiu)—			Pochow	壽州	Anhuei
Islands			Pogranichnaya	綏芬河	Kirin
Loshanhsien	羅山縣	Honan	(Suifenho)		
Lo-yuan	羅原	Fukien	Pok-lo	博羅	Kwangtung
Luchowfu	廬州府	Anhuei	Ponasang	保福山	Fukien
Luhoo	六合	Anhuei	(Focchow)		
Lungchingtsun	龍井村	Fengtien	Port Arthur	旅順口	Manchuria
Lungchow	龍州	Kwangsi	Pu-erh	普洱	Yunnan
Lungtien	永慶	Fukien	Pukow	浦口	Kiangsu
—Ngucheng			Quinsan	崑山	Kiangsu
Macao	澳門	Kwangtung	Renshou	仁壽	Fukien
Manchoull	滿洲里	Heilungkiang	—Jenshou		
Mengtaz	蒙自	Yunnan	Sai-nam	西南	Kwangtung
Mienchuhsien	綿竹縣	Szechwan	Salween River	緬甸河	Burmah
Mukden	奉天府	Fengtien	Sam-kong	三江	Kwangtung
Nan-tau	南頭	Kwangtung	San-on	新安	Kwangtung
Nanchang	南昌	Kiangsi	district		
Nang-wa	南雅	Fukien	Sansing	三姓	Kirin
Nanking	南京	Kiangsu	San-tong	新塘	Kwangtung
Nanning (fu)	南甯府	Kiangsi	Sanyuan	三原	Fukien
Nantung	南通州	Kiangsu	Seoul		Korea
Nanziang	南翔	Kiangsu	Shangchu'an	上泉	Hupei
Newchwang	牛莊	Fengtien	Shanghai	上海	Kiangsu
(Yingkow)			Shanghang	上杭	Fukien
Ng-kang-phu	五華	Kwangtung	Shangtsai hsien	上蔡縣	Honan
—Wukingfu			Shan-hai-kwan	山海關	Hopei
Ngu-cheng	龍田	Fukien	Shao-hsing	韶興	Chekiang
(Lungtien)			Shaowu	邵武	Fukien
Ningpo	甯波	Chekiang	Shasi	沙市	Hupei
Nodoa	那大	Hainan	Shehung hsien	射洪縣	Szechwan
Pagoda	羅星塔	Fukien	Shekki	石岐	Kwangtung
Anchorage			Shek-lung	石龍	Kwangtung
Paik-chuan	拜泉	Fukien	Shensi	陝西	
Pakhoi	北海	Kwangtung	Province		
P'angchuang	龐家莊	Shantung	Shiu-chou	韶州	Kwangtung
Paoning	保甯	Szechwan	Shiuhing	肇慶	Kwangtung
Pao-shan	寶山	Kiangsu	(Shiu-hing)		
Paotingfu	保定府	Hopei			

<i>Name in</i>			<i>Name in</i>		
<i>English</i>	<i>Chinese</i>	<i>Province</i>	<i>English</i>	<i>Chinese</i>	<i>Province</i>
Shiu-kwan District	韶關	Kwangtung	Tekchiu-kha	竹樹脚	Fukien
Shwangchengp'u	雙城堡	Kirin	Tengchow	登州	Honan
Sianfu	西安府	Shensi	Tenghsien	滕縣	Shantung
Siangchenghsien	項城縣	Honan	Tengyueh	騰越	Yunnan
Siangtan	湘潭	Hunan	Tientsin	天津	Hopei
Siangyang	襄陽	Hupei	Tinghai	定海	Chekiang
Siaokan	孝感	Hupei	Ts'angchow	滄州	Hopei
Singapore	新加坡		Tsao-shih	草市	Hunan
Sing-ia (Sienyu)	仙遊	Fukien	Tsianglo	長樂	Fukien
Sintsaihsien	新蔡縣	Shantung	Tsinanfu	濟南府	Shantung
Siokhe	小溪	Fukien	Tsingchowfu	青州府	Shantung
Soochow	蘇州	Kiangsu	Tsingkiangpu	清江浦	Kiangsu
Suichow	隨州	Hupei	Tsingtau	青島	Shantung
Suifu	敘州府	Szechwan	Tsining	濟寧州	Shantung
Sungkiang	松江	Kiangsu	Tsitsihar	齊齊哈爾	Heilungkiang
Swatow	汕頭	Kwangtung	Tsunhua	遵化	Hopei
Szema	思茅	Yunnan	Tungan	同安	Hunan
Sze-Ui (Szewui)	四會	Kwangtung	Tungchow	通縣	Hopei
Taheiho	大黑河	Heilungkiang	South Tungchow	南通州	Kiangsu
Taichowfu	台州府	Chekiang	T'ungch'uang	潼川	Szechwan
Taikang	太康	Honan	Tungkun	東莞	Kwangtung
T'aiiku	太谷	Shansi	Tungliao District	通遼	Fengtien
Tai-leung (T'ailung)	大龍	Kwangtung	Tzechwan	瀘川	Shantung
Tainan (Taiwanfu)	臺南	Formosa	Tzeki	慈谿	Fukien
Taiping	太平	Anhui	U-t'ien-hsien (Yutien)	玉田縣	Hopei
Taiyuanfu	太原府	Shansi	Waichau	惠州	Kwangtung
Takao (Takow)	打狗	Formosa	Wanhsien	嵩縣	Szechwan
Taku	大沽	Hopei	Wei-hai-wei	威海衛	Shantung
Talifu	大理府	Yunnan	Weihsien	衛縣	Shantung
Tam-shui	潭水	Kwangtung	Weihuiifu (Weihowei)	衛輝府	Honan
Tangshan	唐山	Hopei	Wenchow	溫州	Chekiang
Tan-yang	當陽	Hupei	Whampoa	黃埔	Kwangtung
Tao-ti-chen	稻地鎮		Woosung	吳淞	Kiangsu
Tataochen	大稻埕	Fukien	Wuchang	武昌	Hupei
Tat-haw-pow	達濠埠	Kwangtung	Wuchow	梧州	Kwangsi
Tatungfu	大同府	Shansi	Wuhu	蕪湖	Anhui
Tayeh	大冶	Hupei	Wukingfu	五經富	Kwangtung
Te-chou	德州	Shantung	Wusih	無錫	Kiangsu
Teh-ngan-fu (Teianfu)	德安	Shantung	Wuting	武定	Shantung
			Yachow	雅州	Szechwan
			Yangchow	揚州	Kiangsu
			Yatung	亞東	Thibet
			Yenching	郟城	Shantung

<i>Name in</i>			<i>Name in</i>		
<i>English</i>	<i>Chinese</i>	<i>Province</i>	<i>English</i>	<i>Chinese</i>	<i>Province</i>
Yenkifu	延吉府	Shantung	Yung-ching	永清	Hunan
Yenping	延平	Fukien	Yungfu	永福	Fukien
Yingkow	營口	Fengtien	(Ing-hok)		
—Newchwang			Yungping	永平府	Fukien
Yochow	岳州	Hunan	Yunnanfu	雲南府	Yunnan
Yüchow	蔚州	Hopei	Yunnan	雲南	
Yuengkong	陽江廳	Kwangtung	Province		
Yuh sien	攸縣	Hunan	Zikawei	徐家匯	Shanghai (Kiangsu)

II.—INDEX OF PERSONS (BOOK ONE)

NOTE:—Every attempt has been made to obtain the equivalents in Chinese characters of the names mentioned in the text. These names are frequently derived from western publications, in many of which no definite method of spelling has been adopted. Consequently a few mistakes are unavoidable.

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|---|--|
| Abe, K., 114 | Ch'en, K. K. (陳克恢), 118, 121 |
| An-teng (安登), 6 | Ch'en Kuei (陳珪), 53 |
| Bodhidharma (達摩), 55, 72-73 | Ch'en K'ung-shih (陳孔碩), 58 |
| Chang Chi (張機), 131, 185 | Ch'en Nien-tsu (陳念祖), 153 |
| Chang Chieh-pin (張介賓), 98, 127, 129 | Ch'en Szu-cheng (陳司成), 218 |
| Chang Chih-ts'ung (張志聰), 148-149 | Ch'en Tsu-ming (陳自明), 87, 92, 222 |
| Chang Ching-yo (張景岳), 142 | Ch'en Yen (陳言), 86, 91, 92 |
| Chang Chung-ching (張仲景), 49-53, 82, 136, 147, 158, 172, 201 | Ch'eng Chiao-ching (程郊青), 50 |
| Chang Fei-tao (張飛濤), 148 | Ch'eng Mo (程頤), 80 |
| Chang Hsi-fan (張錫蕃), 208 | Ch'eng Tiao-chi (程調之), 165 |
| Chang I-ch'a (張一槎), 77 | Ch'eng Wu-i (成無已), 51, 82, 104 |
| Chang I-jou (張以柔), 148 | Ch'eng Yi-ch'uan (程伊川), 76 |
| Chang Kuo (張果), 89, 198 | Chi Chi-chun (冀致君), 222. |
| Chang Liang (張良), 69 | Chi Liang (季良), 23 |
| Chang Lu (張露), 147, 204 | Chia Fang (賈魴), 80 |
| Chang Mei-an (張梅庵), 161, 165 | Chia I (賈誼), 76 |
| Chang Pai-tsu (張伯祖), 49 | Chiang Wen-fang (蔣文芳), 161, 165 |
| Ch'ang Sang-chün (長桑君), 24, 27 | Chiao I-t'ang (焦易堂), 167 |
| Chang Shih-hsien (張世賢), 81, 83 | Chin Ying (金英), 129 |
| Chang Shih-wan (張石頑), 142 | Ch'in Yueh-jen (秦越人), 24, 27 |
| Chang Shu-chu (章虛谷), 150 | Chiu Tai-chi (饒貸季), 8, 185 |
| Chang Tan-hsien (張隱先), 148 | Ch'i Pai (歧伯), 7, 8, 9, 10, 28, 29, 33, 185, 186 |
| Chang Tao-ling (張道陵), 68-69, 76-77 | Ch'i Te-chih (齊德之), 218 |
| Chang Tzu-he (張子和), 98, 99, 218 | Ch'i Ying (齊嬰), 26 |
| Chang Yüan-su (張元素), 100, 103-104, 185, 203 | Ch'i Yu-shih (耶虞世), 88 |
| Ch'ang Chung-ming (常仲明), 99 | Ch'ien I (錢乙), 87, 90-91, 185 |
| Chao Chien-tzu (趙簡子), 25, 27 | Crou Kung (周公), 16, 42. |
| Chao Hsien-k'e (趙獻可), 127, 152 | Chou Ting (周頤), 222 |
| Chao Meng (趙孟), 23 | Chow Hsueh-hai (周學海), 58 |
| Ch'ao Yüan-fang (巢元方), 83, 135, 185, 214 | Chu Chen-heng (朱震亨), 203 |
| Che Jo-shui (車若水), 213 | Chu Chin-t'ang (居敬堂), 58 |
| Ch'en Chih (陳直), 88 | Chu Fa-lan (竺法蘭), 72 |
| Ch'en Fang-tse (陳方之), 162 | Chu Hsi (朱熹), 76, 102, 127, 136 |
| Ch'en Hsiu-yuan (陳修園), 142, 215 | Chu Hung (朱肱), 86, 185 |
| | Chu Sung (朱松), 165 |

- Chu Tan-chi (朱丹溪), 98, 101-103, 115, 127, 128, 211
 Chu Yen-hsiu (朱彦修), 185
 Chu Yung (祝融), 185
 Chuang Tze (莊子), 15, 41, 42, 68, 71
 Chung Ching-Wen (鍾敬文), 9
 Chung Hsiao-ting (鍾小亭), 208
 Chung Li (鍾離), 78, 79
 Ch'uan, Shao-ch'ing (全紹清), 162
 Ch'un-yu I (淳于意), 48
 Ch'un-yu, Yen (淳于衍), 56
 Confucius (孔夫子), 14, 15, 16, 18, 41, 42, 43, 68, 209
 Courtois F., 107-108
 Dean, 116
 Doju Nagasawa (長澤道壽), 136
 Dosan Manase (曲瀨道三), 136
 Fan A (樊阿), 56
 Fan Ching-jen (范景仁), 28
 Fan T'ien-p'an (范文正), 9
 Fan Wen-cheng (范文正), 76
 Fang Chung-hang (方中行), 50
 Fang I-yuan (方亦元), 165
 Fan, S. C., 162
 Fang Yu-chin (方有執), 128
 Feng Hou (鳳后), 185
 Fu Hsi (伏羲), 2, 6, 10, 16, 185
 Fu Pao (阿寶), 7
 Fujikawa (富士川游), 135, 177
 Garriques, S., 114
 Gekko (月湖), 136
 Censaku Manase (曲直瀬玄湖), 136
 Genshin Yamawaki (山脇玄心), 136
 Gentaku Noma (閑野玄琢), 136
 Gentetsu Inoue (井上玄漱), 136
 Genya Okamoto (岡本玄治), 136
 Gobarana (竺法蘭), 72
 Gonzan Goto (後藤良山), 136
 Hakuju Hashimoto (橋本伯壽), 217
 Han Chih-he (韓祗和), 86
 Han Fei-tzu (韓非子), 28
 Han Pao-sheng (韓保升), 202
 Hang Shih-chun (杭世駿), 28
 Ho Chi-chang (何熾昌), 162
 Ho Ning (和凝), 207
 Hou Ching (侯景), 212
 Howe, M. A., 121
 Hsia Te (夏德), 86
 Hsieh Chin-weng (謝綰翁), 58
 Hsieh En-tseng (謝恩增), 35
 Hsieh Li-heng (謝利恆), 161, 177
 Hsu Chih-ts'ai (徐子才), 75, 202
 Hsu Ching-hui (徐景輝), 77
 Hsu Chung-hang (徐中行), 58
 Hsu Chung-k'e (徐忠可), 142
 Hsu Ling-tai (徐靈胎), 142, 143, 151, 178
 Hsu Pin (徐彬), 52, 82
 Hsü Shu-hsiang (徐叔向), 213
 Hsü Shu-wei (許叔微), 86, 92
 Hsü Ta-chuang (徐大椿), 151-152
 Hsü Tzu-mo (徐子默), 214
 Hsü Yung-cheng (徐用誠), 127
 Hsü Yü (徐玉), 213
 Hsueh Chi (薛已), 129, 142, 222
 Hsüeh Li-chai (薛立齋), 127
 Hsüeh Sheng-pai (薛生白), 142, 143, 150-151
 Hsün Tzu (荀子), 12
 Hu Hou-ki (胡鴻基), 162
 Hu Shih-ko (胡仕可), 203
 Hua Shou (滑壽), 81
 Hua T'o (華佗), 51, 53-56, 185, 198, 201, 227, 232
 Huang-Fu-mi (皇甫謐), 10, 51, 82, 185, 232
 Huang K'un-tsai (黃坤載), 142, 152
 Huang Ti (黃帝), 6, 7-9, 10, 12, 28, 29, 44, 51, 77, 80, 185, 198, 201, 210
 Huang Tse-fang (黃子方), 162
 Huang Yüan-yü (黃元御), 162
 Hunt, Reid, 120
 Hunter, A., 120
 I Chiao (醫矯), 23
 I Ho (醫和), 22-23
 I Huan (醫緩), 22
 I Lu (醫盧), 23
 I Yin (伊尹), 9, 185
 I Yü (醫俞), 23
 Jo-un Saka (坂運淨), 136
 Kan Pai-tsung (甘伯宗), 181
 Kao Shih-ts'ung (高士宗), 142
 Kao Yang-sheng (高陽生), 57
 Kao Yin (咎殷), 86-87, 222
 Kao Wei-ch'ing (高味卿),
 Kao Yün-pai (高韻伯), 149
 Kas'yapa Matanga (攝摩練), 72

- Ke Ch'ien-sun (葛乾孫), 104
 Ke K'e-chiu (葛可久), 104
 Kendall, E. C., 120
 Ko Hung (葛洪), 82-83, 185, 210, 211
 Ko Ying-lei, 131
 Ko Yun-pai (柯韻伯), 142, 143
 Kou Mang (勾芒), 185
 Kuan Kung (關公), 55
 Kuan Tzu (管子), 15, 41, 42, 43
 Kuei Yu-chü (鬼夷區), 9, 185
 Kung Hu (公扈), 26
 Kung Ku (共鼓), 8
 Kuo Chi-chung (郭稽中), 222
 Kuo Shui-t'ing (郭瑞庭), 165
 Lao Tzu (老子), 15, 67, 69
 Lei Hsiao (雷駁), 202
 Lei Kung (雷公), 9, 185
 Li Chien-yüan (李建元), 105
 Li Hsi (李醯), 27
 Li Hsin (李迅), 87
 Li Hsuan (李暄), 213
 Li Kao (李杲), 100, 185, 203
 Li Lien (李廉), 90, 180-181
 Li Ming-chih (李明之), 100
 Li Mu (力牧), 185
 Li Shih-chen (李時珍), 59-60, 105, 108, 124, 181, 202, 216, 217
 Li Sih-sheng (李詩聖), 87, 222
 Li Shou (樣首), 8
 Li Szu (李斯), 80
 Li Tang-chih (李當之), 202
 Li T'ao (李濤), 9, 98
 Li T'ing (李挺), 210, 213
 Li Tung-yüan (李東垣), 98, 100-101, 103, 129
 Li Yüan-shao (李元兆), 147
 Liang Ping-kuei (梁炳燿), 165
 Lieh-Shan Shih (烈山氏), 6
 Lich Tzu (列子), 15, 26, 68
 Lin I (林隱), 58
 Ling Lun (伶倫), 8
 Liu Chi-nu (劉寄奴), 4
 Liu Fang (劉方), 212
 Liu Fu-cheng (劉復真), 92
 Liu Hsiang (劉向), 28
 Liu J. Heng (劉瑞恆), 162
 Liu Shou-chen (劉守真), 98-99, 103
 Liu Shu (劉恕), 1, 11
 Liu Wan-su (劉完素), 185
 Lo Ch'i (羅奇), 77
 Lo Chih-t'i (羅知悌), 102, 103
 Lo T'ien-i (羅天益), 101
 Lu Ch'ien (盧謙), 9
 Lu Chih (陸贄), 76
 Lu Chiu-chih (陸九芝), 49
 Lu Mao-hsiu (陸懋修), 157-158
 Lu Tsung-ch'iang (盧宗彊), 165
 Lu Yuan-lei (陸淵雷), 165
 Lü Kuang (呂廣), 81
 Lü Tung-pin (呂洞賓), 78-79
 Ma Chih-chi (麻知幾), 99
 Ma Shih-huang (馬師皇), 9, 185
 Ma Yuan (馬援), 215
 Macdonald, 116
 Macgowan, D. J., 121, 212, 213
 Mencius (孟子), 11, 15, 42, 43, 45
 Miao Fu (苗夫), 14
 Miu Hsi-yung (繆希雍), 128, 203
 Mo Tzu (墨子), 12
 Molshin Wage (和氣明親), 136
 New Way-sung (牛惠生), 162
 Ni Wei-te (倪維德), 128
 Nieh Chi-fu (聶吉甫), 28
 Okamura (岡川龍彦), 217
 Pai Kao (伯高), 185
 Pao Po-tzu (抱朴子), 71, 83
 Pao Shih-sheng (包識生), 165
 P'ang An-shih (龐安時), 86, 91
 P'an Ku (盤古), 1
 Pao Hsi (庖犧), 6
 P'eng K'eng (彭鏗), 43
 Pi Hua-te (畢華德), 223
 Pien Ch'iao (扁鵲), 13, 24-27, 44, 45, 55, 57, 81, 185, 198, 227, 232
 Piya, 115
 Rama, 115
 Read, B. E. 109, 118, 120, 122, 204
 Rock, J. F. 115
 Saito, I. 114
 San Ts'ang (三倉), 80
 Sang Yüeh (桑悅), 28
 Sanki Tashiro (田代三喜), 136
 Seirin Manase (曲直瀬正淋), 136
 Shao Shih (少師), 185
 Shao Yu (少俞), 185

- She Mo-t'eng (攝摩騰), 72
 Shen Kuo (沈括), 86
 Shen Te-ch'eng (沈德潛), 150
 Shen Nung (神農), 3, 6-7, 10, 11, 81, 117, 185, 201
 Shigehiro Kanamochi (金持重弘), 136
 Shih Ching (石經), 80
 Shih Huang Ti (始皇帝), 68, 74
 Shokei Takeda (竹田昌慶), 136
 Shu-an Kagawa (香川秀菴), 136
 Sokei Yoshida (吉田宗桂), 136
 Soha Hata (桑巴宗), 136
 Stuart, G., 109
 Su Chien (蘇鑾), 213
 Su Shih (蘇市), 139
 Su Sung (蘇頌), 92, 93, 203
 Su Tung-po (蘇東坡), 86, 91
 Sun Szu-mo (孫思邈), 51, 73, 76, 84, 185, 210, 224
 Sung Ta-jen (孫大仁), 144
 Sung Tz'u (宋慈), 207
 Sung Wu-seng (宋悟生), 162
 Szu-ma Ch'ien (司馬遷), 11, 24, 26, 27, 67, 76
 Ta Mo (達摩), 72
 Ta Nao (大撓), 8
 Ta Yung (大容), 8
 Tai Yüan-li (戴原禮), 127, 128, 131
 Taki Motofumi (多紀元簡), 176
 Taki Mototane (多紀元胤), 176
 T'an Yen-k'ai (譚延闓), 166
 T'ang Shan-wei (唐慎微), 88, 92-93, 203
 T'ao Hung-ching (陶弘景), 51, 73, 82, 83, 202
 Ting Kan-jen (丁甘仁), 144
 Tou Han-ch'ing (竇漢卿), 217
 Toyo Yamawaki (山陽東洋), 136
 Ts'ai Yung (蔡邕), 80
 Ts'ang Chieh (倉頡), 80
 Ts'ang Kung (倉公), 43, 48-49, 185
 Ts'ao Ts'ao (曹操), 55-56
 Tseng Ch'aojan (曾超然), 213
 Tsou Hung (鄒蓀), 88
 Tsu Min-yi (褚民誼), 162
 Tung Chi (董汲), 86, 88, 213
 Tung Hsüan Chü Shih (東軒居士), 87
 T'ung Lien (董漢), 207
 T'ung Chün (桐君), 9, 185, 202
 Wang Ang (汪昂), 148, 204
 Wang Chi (王壽), 232
 Wang Ch'ing-jen (王清任), 155-156, 158, 199-200
 Wang Hao-ku (王好古), 203
 Wang Ho-an (王和安), 165
 Wang Hsi-chih (王羲之), 80
 Wang Hsun-ch'eng (王勳臣), 215
 Wang Hung-nai (王鉞乃), 58
 Wang K'ien-t'ang (王肯堂), 87, 128, 130, 208
 Wang K'uang (王昶), 86
 Wang Lun (王倫), 80
 Wang Meng-ying (王孟英), 142, 143, 150, 174, 215
 Wang Ping (王冰), 38, 185
 Wang Shih-hsiung (王士雄), 156-157
 Wang Shu-ho (王叔和), 49-50, 57, 59-60, 82, 83, 128, 131, 185, 198
 Wang Shu-pao (王叔寶), 224-225
 Wang Tan (王旦), 215
 Wang Tao (王濤), 45, 84, 228
 Wang Tzu-chin (王子勤), 165
 Wang Wei-te (王維德), 87, 232
 Wang Yen (王炎), 28
 Wang Yu (王與), 208
 Wang Yu-huai (王又槐), 208
 Wei Tzu-tsang (韋慈藏), 185
 Wen Chung-tao (文仲陶), 215
 Wen I-kung (文懿公), 102
 Wen Wang (文王), 16
 Woo, S. M. (胡宜明), 162
 Wu Chih-wang (武之望), 130
 Wu Chü-t'ung (吳鞠通), 142, 143, 150
 Wu Fan (巫凡), 13
 Wu Hsiang (巫相), 13
 Wu Hsien (巫咸), 9, 14
 Wu I-lo (吳儀洛), 204
 Wu Kung-tao (吳公陶), 165
 Wu Li (巫履), 13
 Wu Lien-teh (伍連德), 143, 162, 233
 Wu Mien-hsüeh (吳勉學), 58
 Wu Peng (巫彭), 13
 Wu P'u (吳普), 56, 202
 Wu T'ang (吳瑭), 154-155
 Wu Ti (巫砥), 68, 202

- Wu Yang (巫陽), 13
 Wu Yao-t'ing (伍耀庭), 165
 Wu Yen-k'uei (吳彥夔), 86
 Wu Yiu-hsing (吳有性), 129-130
 Wu Yu-k'e (吳又可), 128
 Yang Chu (楊朱), 23
 Yang Wu (養吾), 225
 Yasuyori Tamba (丹波康瀬), 135
 Yeh T'ien-shih (葉天士), 142, 143, 149-150, 233
 Yen Fu-ching (顏福慶), 162
 Yen Ti (炎帝), 6, 10
 -Yen Yung-he (嚴用和), 86, 92
 Yü Chia-yen (喻嘉言), 50, 142, 143
 Yu Fu (俞跗), 9, 14, 185, 232
 Yu Pien (俞辨), 217
 Yu Shih-yu (余師愚), 142
 Yui Voon-ping (俞鳳賓), 161, 162
 Yu Yen (俞炎), 162
 Yü Yun-hsiu (余雲岫), 161, 162, 213
 Yü (禹), 23
 Yü Ch'ang (喻昌), 147
 Yü Wang (喻同), 8
 Yuan Ch'i-hsin (阮其斯), 208
 Yüan Piao (袁表), 58
 Yün Te-fu (逯德父), 101
 Yung Ch'eng (容成), 8
 Yung Yüan (榮猿), 8

III.—INDEX OF PERSONS (BOOK TWO)

NOTE:—Every attempt has been made to obtain the equivalents in Chinese characters of the names mentioned in the text. These names are frequently derived from western publications, in many of which no definite method of spelling has been adopted. Consequently a few mistakes are unavoidable.

Abeel, David, 315, 331, 345
 Abercrombie, Dr. John, 326
 Adams, Dr. W. F., 583
 Adams, Dr. T. B., 455, 491
 Adolph, Dr. H. W., 615
 Aglen, Sir Francis (安格聯), 593
 Aird, Dr., 563
 Aisie (Isaiah), 261
 Aitken, Dr. W. K., Chronol. T., 1884
 Akers, Dr. L. E. (Mrs. Perkins), 458
 Aldridge, Dr. E. A., 459, 495
 Allan, Dr. F. F., 637
 Allen, Dr. H. N., 460
 Van Allen, Dr. C. M., 757-758
 Amherst, Ambassador, 307
 Ammann, Dr., 551
 Amoss, Dr. H. L., 684
 Anderson, Dr. A., 289, 313, 314, 320, 359
 Anderson, Mr. Anthony, 452
 Anderson, Dame A., 617
 Anderson, Dr. John, 809
 Anderson, Dr. & Mrs. J. A., 537, 554
 Anderson, Dr. J. Webb, 546
 Anderson, Mrs., 520
 Anderson, Dr. P., 431, 577
 Anderson, Miss (Dr.) S. J., 435
 Anderson, W. H. P., 660, 759, 775
 Andersson, Dr. Anton, 545
 Andrew, Dr. C. T., 566, 568, 586
 Andrews, Miss E. C., 491
 Andrews, Dr. Russell, 645
 Angear, Dr., 504
 Aoyama, Prof. (青山), 516
 Appleton, Dr. V. B., 662, 667, 677
 Apun, see Chan Apun

Aristeas, 259
 Aspland, Dr. W. H. Graham (韓大夫), 540, 549, 564, 577
 (Chan) Atsung (林亞忠), 322, 325, 362
 Atterbury, Dr. B. C., 426, 441, 464, 465, 470, 492-493, 520, 527
 Atwater, Dr. R. M., 670
 Atwood, Rev. Dr. I. J., 461, 498
 Au-Yang, Mr. (歐陽先生), 622
 (Chun) Awing (陳亞榮), 362
 Ayer, Dr. Mary A., 583
 Ayers, Dr. T. W., 585
 Ayres, Dr. P. B. C., 440

Baber, E. C., 508
 Babington, Dr. S. N., 446, 577, 582
 Baelz, Prof. E., 418
 Baker, Miss E., 535
 Baldwin, Rev. C. C., 455
 Balfour, Dr. A., 360
 Balfour, Edward, 328
 Ball, Rev. Dr. Dyer, 339, 343
 Ball, James Dyer 281, 510
 Balme, Dr. H., 610, 613, 615, 616, 667, 704, 815-816
 Balmis, Dr. F. X., 277
 Bannister, Rev. W., 504
 Bao, Dr. W. L. (鮑醫生), 716
 Baranoff, Dr. A. F., 803
 Barbour, Prof. Geo., 483
 Barchet, Rev. Dr. S. P., 379, 420, 489, 527, 535
 Barlow, Dr. C. H., 564, 578
 Barr, Miss M., 492
 Barrie, Dr. H. G., 588, 678
 Barrow, John, 278

- Barton, Dr. (Hongkong), 358
 Barton, Dr. Geo., 395, 398
 Basilevski, Dr., 272
 Basilus, 263
 Batcheller, Dr. W. B., 587
 Baumann, Mr. H., 580
 Baxter, Dr. A. K., 585
 Bazin, Brother L., 269
 Beach, Dr., 544
 Beale, Mr. T. C., 351
 Beam, Dr. J. A., 583
 Beattie, Dr. D., 487
 Beatty, Dr., 446
 Beaty, Mary L., 640
 Beaumont, Dr. J. M., 395
 Beebe, Rev. Dr. R. C., (北平), 460, 464, 465, 478, 497, 528, 614, 642, 670
 Begg, Dr. C., 457
 Belelios, Hon. E. R., 471
 Bell, Dr. (Hongkong), 475
 Bell, Nurse E. Hope, 561, 610
 Bell, Dr. John, 271
 Bell, Dr. L. Nelson, 580
 Bement, Dr. Lucy P., 533
 Benedict, Dr. F. G., 773
 Benn, Dr. Rachel, 520
 Bennett, Miss (Dr.), 578
 Bercovitz, Dr. N., 813
 Bere, Minnie, Chronol. T., 1910
 Berglund, Prof. H., 684
 Bernard, Brother, 354, 381, 431
 Berst, Dr. W. L., 652
 Betow, Dr. Emma J., 586
 Bettelheim, Rev. Dr. B. J., Chronol. T., 1846.
 Bigler, Dr. Regina, 530
 Billings, Dr. F., 635
 Birt, Dr. E., 623, 696
 Bixby, Dr. Josephine May, 531
 Black, Dr. Davidson, 635, 674, 688
 Bliss, Dr. E. L., 492, 578
 Bliss, Dr. Ruth C., 530
 Bliss, Dr. S. F., 426
 Blumenstock, Dr. G., 623, 696
 Boggs, Mrs. (Dr.) J. J., 530, 541, 561
 Bolt, Dr. R. A., 608
 Bonnell, Miss C., 574
 Boone, Dr. H. W., 380, 381, 421, 428, 443, 452-453, 464, 465, 466, 467-468, 469, 485, 490, 522-523, 550, 575, 621
 Boone, Rev. W. J. (Bishop), 331, 345
 Booth, Dr. R. T., 543, 565, 590, 611
 Borcic, Dr. B., 727-728
 Bordet, Prof. Jules, 733
 Du Bose, Hampden, 566
 Boudreau, Dr. F., 727
 Boughton, Miss (Dr.) E. F., 481
 Bouvet, Father J., 266
 Bowditch, Dr., 326
 Bowring, LL.D., 340
 Boyd, Dr. H. W., 542, 625
 Boym, Father M., 265
 Brackett, Dr. E. G., 683
 Bradford, Dr., 311
 Bradly, Dr. Neville, 579
 Brancati, Father, 421
 Branch, Dr. J. R. B. (白其知), 630, 779
 Brander, Dr. T. L., 520, 527
 Brauer, Prof. L., 696
 Bretschneider, Dr. E., 272
 Brewster, Mrs. W., 504
 Bridgman, Elijah C., 315, 318, 319, 320, 321, 334, 341
 Broquet, Dr. C., 592
 Brown, Dr. J., 426
 Brown, Dr. Mary, 481
 Brown, Samuel R., 359, 371
 Browning, Dr., 489
 Bruce, Mr., 383
 Brunyate, Sir W., 680
 Buchanan, Dr. G., 733
 Bume, Dr. S. F., 758, 775
 Bunn, Rev. Dr. A. C., 434
 Burdick, Miss S. M., 491
 Burnett, Miss M. A., 453
 Burnham, Dr. Mary L., 534, 579
 Burns, Rev. Wm. C., 382, 483
 Burton, Dr. G. W., 353
 Bushell, Dr. St. W. (卜士禮), 424, 470
 Bushnell, Miss (Dr.) K. C., 434
 Bussière, Dr. J. A. (貝熙業), 765
 Butchart, Dr. J., 536
 Butler, Miss E. H., 478, 486
 Buttrick, W., 633
 Byles, Dr. Hilda M., Chronol. T., 1907

- C**abell, Dr. A. G., 441
 Cadbury, Dr. Wm. W., 546, 625, 645, 647, 673, 708-709
 Calhoun, Hon. J. W., 632
 Cameron, Rev. Dr. Jas., 494, 498
 Cameron, J., 765
 Cameron, Major-General, 472
 Campbell, Mrs. J. P., 444
 Campbell, Dr. R. H., 497
 Candida, 263
 Canright, Dr. H. L., 481, 500, 637
 Cantacuzène, Prof. J., 733
 Cantlie, Dr. (Sir) James, 448, 472, 474-476
 Carlton, Miss (Dr.) M. E., 486
 Carmichael, Dr. J. R., 372, 395, 426, 437
 Carmichael, Nurse Janet, 559
 Carnegie, Dr. John, 378
 Carneiro, Bishop D. B., 262
 Carr, Capt., 395
 Carr, Dr. J. Cecil, 584, 587
 Carre, Mrs. W. W., 544
 Carrow, Dr. J. F., 395, 406
 Carter, Dr. W. S., 681
 Carvalho, Dr., 475
 Case, Dr. J. Norman, 504
 Casterton, Nurse Martha L., 482
 Cattell, Dr. Frances F., 533
 Chabaneix, Dr. J., 593
 Chalmers, John, 371, 471, 472, 475
 Chambers, Miss I., 492
 Chan Apun (陳亞璜), 322, 359, 362
 Chan Ashing (陳亞星), 452
 Chan Sui Wa, Dr., (陳瑞華), 542
 Chand, Dr. Wihal, 300
 Chang, Dr. (Foochow) (張醫生), 455
 Chang, Dr. (Tientsin-Hongkong) (張醫生), 479
 Chang, Dr. C. C. (張醫生), 573
 Chang Ch'ien (張憲), 259, 260
 Chang Chien, Hon. (張善), 616
 Chang Chih-tung, Viceroy (張之洞), 521
 Chang Chin-kai (張清溪), 439
 Chang Ching-yao, Gen. (張敬堯), 688
 Chang Chun, Gen. (張軍), 697
 Chang, Dr. D. C. (張道中), 658
 Chang, Mr. D. S. (張先生), 697
 Chang, Dr. H. C. (張孝慈), 775
 Chang I Ping, Mr. (張一平), 603
 Chang, Dr. J. C. (張醫生), 658
 Chang, Mr. J. D. (張集成), 531
 Chang Po-ling, Dr. (張伯苓), 684
 Chang, Dr. S. M. (張湘紋), 811
 Chang Su O. Nurse (張素娥), 665
 Chang Shu-cheng, Viceroy (張樹聲), 285
 Chang Tso-lin, Gen. (張作霖), 712
 Chang, Dr. T. C. (Chang Teh-chow) (張德周), 706
 Chang, Dr. W. (張維), 785
 Chang Yin-huan, Ambassador (張蔭桓), 524
 Chao Erh-sun, Viceroy (趙爾巽), 593
 Chao, H. H. (趙), 696
 Chao, Dr. S. F. (趙士法), 667
 Chao Wu-ch'iao, Dr. (趙午橋), 705
 Chao Yao-nung, Dr. (趙堯農), 642
 Chapman, Dr. H. O., 773
 Char, Dr. G. Y. (謝元甫), 623, 635, 636, 685
 Chau Afu (周亞福), 341
 Cheal, Dr. P., 577
 Cheer, Dr. S. N. (威嘉南), 794
 Chen, Dr. (Liling) (陳醫生), 640
 Chen, Judge (陳推事), 419
 Chen An-fu, Mr. (陳安福), 696
 Ch'en Chao-ch'ang, Gov. (陳昭常), 581
 Ch'en, Dr. C. C. (陳志潛), 800
 Chen, Dr. C. E. (陳醫生), 716
 Chen, Mr. Eugene (陳友仁), 708
 Chen, Dr. F. K. (陳鴻庚), 781
 Chen, Dr. H. C. (陳錫慶), 550, 604
 Chen Hsioh-ling, Dr. (陳學齡), 639
 Chen, Mr. Ivan (陳遠範), 603
 Chen, Mr. K. P. (陳光甫), 696
 Chen, Dr. S. P. (陳祀邦), 606, 685
 Chen, Dr. Y. S. (陳森如), 616
 Ch'en Dr. W. T. (陳醫生), 765
 Cheng, Dr. H. A. (鄭醫生), 542
 Ch'eng Tsung-yi (程宗儀), 634
 Chesnut, Dr. Eleanor, 530, 561
 Cheung Kan-kwong (張耿光), 556
 Cheung Yan-tsun, Viceroy (張人駿), 541
 Chi, K. C. (齊先生), 638, 699
 Chi Tu-teng, Dr. (齊大登), 546

- Chia, Dr. W. L. (嘉惠霖), 646
 Chiang, Dr. (Peking) (江醫生), 567
 Chiang Ching, Dr. (江清)
 see Dr. P. C. Kiang
 Chiang Chi-ho, Mr. (江志和), 642
 Chiang Chih-hsin, Dr. (蔣志新), 652
 Chiang Feng-chi, Dr. (江逢治), 624
 Chiang, Dr. H. T. (江虎臣), 607
 Chiang I-yuen, Mr. (江一源), 616
 Chiang Kai-shek, Gen. (蔣介石), 763
 Chiang, Dr. S. F. (江上峯), 742
 Chien, Dr. K. H. (錢醫生), 699
 Chin, Dr. C. C. (錢崇澗), 646
 Chin Ling-yu (金寧玉), 488
 Ch'ing, Mrs. (蔡太太), 529
 Ching Yuen-ping (景原平), 623
 Chinnery, George, 310
 Chiu Lai-chi, Mr. (招厲枝), 616
 Chou Hsueh-hsi, Mr. (周學熙), 607, 649
 Chou Yi-ch'un, D. Litt. (周詒春), 684, 686
 Chouzy, Bishop, 513
 Chow, Dr. (Tientsin) (周醫生), 479
 Chou Huan-hsi, Dr. (周寰西), 706
 Chow Kuei, Dr. (周遠), 614, 642, 658
 Chow, Sir Shou-sen (周壽臣), 818
 Christie, Dr. D., 444-446, 464, 465, 519, 527, 572, 591, 593, 607, 608, 620, 621
 Chuan Shao-ching (全紹清), (Dr. S. H. Chuan), 543, 663, 675, 684, 711, 722, 765, 766
 Chu, Mr. (朱先生), 584
 Chu Chi-chien, Mr. (朱啓鈴), 601, 607
 Chu, Dr. C. K. (朱贊), 791
 Chu Ching-lan, Gov. (朱慶瀾), 611
 Chu, Dr. H. P. (朱恆璧), 630, 774, 775, 778
 Chu Kwong-toh, Dr. (朱光度), 781
 Chu Ming-yi (Dr. M. Y. Chu) see Ts'u Ming-yi (褚民誼)
 Chu, Mr. S. C. (朱先生), 696
 Chu, Dr. S. Y. (朱世英), 730
 Chu, Dr. Y. F. (朱毓芬), 707
 Chun-fu (陳福), 352, 379, 380
 Chung King-ue, Dr. (鍾敬虞), 474
 Chung Kong-kan, Dr. (鍾女醫士), 708
 Chung Mo-sheng, Dr. (鍾穆生), 581
 Chung Tsoi-chuen (鍾才泉), 553
 Chung, Dr. W. P. (鍾拱辰), 604
 Cibot, Father P. M., 269, 273
 Cieh, Y. J. (謝先生), 696
 Ciong, Dr. (章醫生), 576
 Ciuca, Prof. M., 738
 Clark, Dr. F., 476
 Clark, Dr. J. G., 680
 Clarke, Nurse A., 561
 Cleyer, Dr., 386
 Cleyer, Dr. Andreas, 265
 Cobbold, Dr. T. Spencer, 418
 Cochran, Dr. S., 464, 584, 614, 671, 675
 Cochrane, Dr. Th., 540, 547, 549, 608, 632, 644, 680
 Cockburn, Rev. Geo., 434, 495
 Cocker, Mr. T. E., 511
 Coe, Dr. H. E., 608
 Coffin, Mr. Lemuel, 556
 Coghill, Dr. J. G. S., 400
 Cohn, Dr. A. E., 683
 Colborne, Dr. Wm. W., Chronol. T., 1890
 Cole, Dr. A. F., 446, 611
 Colledge, Lionel, 309
 Colledge, Dr. Th. R., 304, 308-311, 312-313, 314-315, 316, 318, 319, 320, 326, 332, 337, 338, 342
 Collins, Rev. Dr. Wm. H., 379, 382, 387-388, 424-425
 Colman, Dr. Robert Jr., 428, 462, 465, 468, 524
 Combs, Dr. Lucinda, 425
 Conrady, Father, 587
 Coole, Dr. Thos. H., 587
 Cooper, Sir Astley, 308, 310
 Cooper, Mr. F. C., 523, 550
 Corey, Miss (Dr.) C. A., 455, 486
 Corlies, Dr. Brinton, 300
 Cormack, Dr. J. G., 542, 598, 609, 631, 642, 783
 Cort, Prof. W. W., 683, 684
 Da Costa, Bro. J. J., 268
 Councilman, Dr. W. T., 688
 Couplet, Father Ph., 265
 Cousland, Dr. P. B., 456, 464, 465, 482-483, 526, 527, 528, 552, 555, 560, 562, 563, 611, 644, 667, 671, 673, 703, 704, 776
 Cowdry, Dr. E. V., 635
 Cox, Dr. G. A., 497, 532, 536
 Cox, Rev. J., 371

- Cox, Dr. J. R., 580
 Cox, Dr. R. H., 304, 311, 317
 Cox, Dr. S. M., 590, 591, 603, 608
 Craddock, Dr. R. F., 814
 Crawford, Dr. A. S., 630
 Crews, Rev. Dr. G. B., 461, 465, 470, 493
 Crichton, Dr., 303
 Crockart, Mr. F., 620
 Cross, Dr. J., 527
 Crow, Mr. W. E., 472, 475
 Cumming, Surgeon-Gen. H. S., 733
 Cumming, Dr. H. L., 678
 Cumming, Dr. Wm. H., 345
 Cunningham, Dr. Frances, 588
 Cunningham, Mrs. Rhoda, 755
 Curtiss, Rev. Dr. W. H., 493, 527
 Cushing, Caleb, 334
- D**allas, Mr. A. G., 351
 Daly, Dr. C. C. de Burgh, 447, 489, 518, 532
 Daniells, Miss (Dr.) C. H., 424, 456
 Danner, Mr. Wm. M., 665
 Dau Se Zak, Dr. (陶漱石), 604
 Dansey-Smith, Dr., 446
 Davenport, Dr. C. J., 464, 498, 532, 563, 575, 614, 615, 669, 808
 Davenport, Rev. Dr. S. A., 420
 Davidson, Mr. & Mrs. R. J., 498, 584
 Davis, Dr. C. Noel, 672, 744, 773
 Davis, Mrs. El. Sleeper, 532
 Davis, Mrs. Geo. Sr., 425
 Davis, Mr. H. W., 476
 Day, Dr. E.-li (譚以禮), 549, 550, 562, 607, 658
 Deane, Dr. A. Sharp, 298, 513, 514
 Deas, Dr. W. A., 458, 464, 465
 Decker, Dr. H. W., 618
 Denby, U.S. Min. Chas., 478
 Denny, Dr. L. D., 500
 Dent & Co., 320
 Dent, Mr. R. V., 809
 Depasse, Dr., 425
 Derry, Miss, 492
 Despiana, Monsieur, 281
 Dethève, Dr., 425
 Devan, Rev. Dr. T. T., 343
 Dickson, Dr. Madge (Mrs. Mateer), 481
 Dickson, Dr. Margaret, 481
- Dickson, Dr. M., 431
 Dickson, Dr. W. G., 344, 362, 363, 365, 373, 488
 Digby, Dr. K. H., 680
 Dill, Dr. Francis, 357, 353, 359
 Dilley, Dr. F. E., 549, 636
 Diltney, W., 410
 Dingman, Miss, 661
 Dionis, Pierre, 267
 Dipper, Dr. E. (狄博爾), 587, 648
 Diver, Dr. Wm. Beck, 321-322
 Djang Shu-giang, Dr. (張壽江), 439
 Dobson, Nurse, 520
 Dobson, Dr. W. H., 653
 Dods, Dr. G., 372, 373
 Dold, Dr., 623
 Doolittle, Miss (Dr.) L. J., 583
 Douglas, Rev. C., 389
 Douthwaite, Rev. Dr. A. W., 297, 435, 456, 461, 464, 465, 468, 478, 484, 486, 494, 520
 Douw, Miss D. M., 577
 Dow, Dr. Jeannie Is., 534, 580
 Drew, Customs Comm., 518
 Drysdale, Ringer & Co., 454
 Dubois—Raymond, Prof., 551, 623
 Dudgeon, Dr. John, 273, 287, 384, 388, 393, 394, 395, 424-425, 427, 470, 483-484, 485
 Dudley, Prof. E. C., 683
 Dukes, Dr. O. A., Chronol. T., 1884
 Duncan, Dr., 303
 Dunlap, Dr. A. M., 635, 685
 Dunlap, Dr. R. W., 649
 Dyer, Mr. B. R., 802
 Dzau, Dr. S. Y. (曹辛餘), 550
 Dzau, Tsz-seh (Rev. C. K. Marshall) (曹志沂), 497
 Dzen, Dr. M. Y. (程慕顧), 742
 Dzung, Dr. (Ningpo) (曾醫生), 710
 Dzung, Dr. (Soochow) (仲醫生), 497
 Dzung, Dr. Z. D. (陳須文), 604
- E**arle, Dr. H. G., 614, 708, 767, 768, 771, 773, 775, 780, 808-809
 Edge, Dr. P. G., 775
 Edkins, Joseph, 427
 Edmonds, Dr. Agnes M., 557
 Edsall, Dr. D. L., 683
 Edwards, Dr. E. H., 459, 497

Eggers, Dr. H. E., 622
 Eich, Dr. G., 580
 Eldridge, Dr. Stuart, 428
 Elliot, Mr. Chas., 632
 Ellerbek, Dr. S. A., 588, 620, 621, 653
 Elliott, Dr. C. C., 637.
 Embery, Mr. W. J., 653.
 Embrey, H. C., 636.
 Ericksen, Nurse C., 583.
 Eubank, Rev. Dr. M. D., 537.
 Evans, Dr. (Hangchow), 446.
 Evans, Mr. Edward, 292.
 Evans, Dr. P. S. Jr., 553, 617.
Faber, Rev. E., 377, 404, 409-410, 586.
 Faber, Dr. Knud, 619, 786-790.
 Fahmy, Dr. A., 501, 527.
 Fallier, Dr., 354.
 Fan Shao-ko, Dr. (范少科), 642
 Fan Yuan-lien, Mr. (范源濂), 635, 679.
 Fang I-chi, Dr. (方頤積), 748.
 Fang, Dr. Shisan C. (方肇石珊), 648, 663.
 Farrar, Dr. R., 593.
 Farries, Dr. W. R., 481.
 Farthing, Mr. G. B., 497.
 Faung, Dr. K. Z., (方嘉成), 774.
 Faust, Dr. E. C., 636.
 Fearn, Dr. J. B., 578.
 Feng En-kun, (馮恩岷), 591.
 Feng, General (馮玉祥), 459.
 Fenouil, Father, 508.
 Feray, Dr., 579.
 Ferguson, Dr. John C. (福開森), 523, 528, 591.
 Finch, Dr. C. H., 503.
 Fischer, Dr., 623.
 Fish, Dr. M. W., 353, 395.
 Fishburne, Dr. R. B., Chronol. T., 1881.
 Flexner, Prof. S., 630, 633.
 Fong, Dr. C. see Fang, Shisan C. 方肇(石珊).
 Fong Sec, Dr. (鄭富灼), 665.
 Fontaney, Father J. de. 266.
 Ford, Mr., 475.
 Forman, Miss Eva, 639.
 Forrest, Miss F., 580.
 Foster, Dr. J. H., 630.

Fowler, Dr. H., 464, 535, 660, 671, 673, 676, 770.
 Francis, Dr. R. F., 713.
 Franklyn, Dr. L. H., 395.
 Frazer, Rev. Dr. J. B., 431.
 Frazer, Dr. J., 395, 441, 520, 532.
 Frazier, Dr. C. H., 675.
 Freeman, Dr. C. W., 299.
 French, Rev. J. B., 344.
 French, Dr. M. Isabella, 536, 582.
 Fresson, Dr. H., 678.
 Fryer, John, 394, 484.
 Fu, Dr. L. C. (傅醫生), 568
 Fuchs, Dr. A., 683
 Fuchs, Prof. E., 683
 Fujinami, Prof. A., 592
 Fuller, Rev. W. R., 378, 389.
 Fullerton, Dr. Ellen M., 550.
 Fulton, Dr. Mary H., 451, 465, 482, 486, 530, 541, 542, 555, 560, 644.
 Fung, Dr. Yun-fat (馮潤發), 730.
Gage, Mrs. (Dr.) C. Brownell, 584, 630.
 Gage, Miss Nina D., 561, 615, 672.
 Gale, Ailie S., 773.
 Gale, Dr. Mary, 491.
 Galeotti, Dr. G., 593.
 Galle, Dr. 395, 402.
 Galt, Dr. C. M., 759.
 Galt, Dr. J., 295, 433.
 Garner, Dr. M. Emily, 491, 614
 Garwin (Harwin), Dr. Th., 271.
 Gaspais, Msgr. A., 652.
 Gates, Fred. T., 633.
 Gates, Dr. Mary J., 490, 523.
 Gattrell, Dr., 563.
 Gauld, Dr. Wm., 382, 423-424, 482, 760.
 Gautier, Dr. R., 727.
 Gaynor, Dr. Lucy A., 497, 559.
 Gear, Dr. H. S., 782.
 Genaehr, F., 355-356, 409.
 Gentil, 386.
 Gentle, Dr. James, 380, 389, 395.
 Gerbillon, Father J. F., 266, 817.
 Gerlach, Dr. C., 440, 472.
 Gerngross, Dr., 623.
 Gibb, Dr. J. G., 549, 591, 632.
 Gilchrist, Miss (Dr.) E., 458.

- Gillison, Dr. Harris, 495.
 Gillison, Rev. Dr. Thos., 457, 542, 543, 555, 564, 704.
 Gilmour, Rev. James, 479, 499.
 Glenton, Miss (Dr.), 549.
 Gloss, Dr. Anna D., 458, 493, 532, 529, 551-552, 557.
 Gnewqua, (倪華), 278.
 Goddard, Mrs., (Dr. Nieberg), 525, 527.
 Goddard, Dr. F. W., 578, 773.
 Goecking, Rev. Dr. H., 356, 409.
 Goldsbury, Dr. J., 498.
 Goldwater, Dr. S. S., 681.
 Gonzales-Fabela, Dr. O., 593.
 Goodwin, Dr. T. S., 710.
 Gordon, Dr. C. A., 399.
 Gordon, C. G., 369, 370.
 Gordon, Rev. Dr. R. J., 503.
 Gotteberg, Mrs. (Dr.) J. A. O., 583.
 Gough, Rev. F. F., 379.
 Graham, Nurse, 502.
 Graham, Dr. Andrew, 298, 565, 577.
 Graham, Dr. Lucinda, 502.
 Grant, Dr. David, 460.
 Grant, Dr. J. B., 670, 673, 677, 765, 766, 767, 780.
 Grant, Dr. James S., 489.
 Graves, Rev. Dr. R. H., 343, 373, 374-375, 376, 377, 408, 487, 530.
 Gray, Dr. G. D., 539, 540, 563, 607.
 Gray, Dr. J. H., 677, 678.
 Greene, J. D., 633.
 Greene, Mr. Roger S., (顧臨), 606, 612, 630, 633, 680, 685, 686, 767.
 Gregory, Dr. James J., 482.
 Greig, Dr. J. A., 503, 581.
 Griffith, Dr. E. M., 453, 464, 465, 467.
 Griggs, Dr. J. F., 549.
 Grosvenor, Hon. T. G., 508.
 Gutzlaff, Rev. K. F. A., 331, 333.
 Guinness, Dr. G. W., 584.
 Gulick, Rev. J. T., 421, 432.
 Gulick, Rev. Dr. L. H., 464, 465.
 Gulick, Sidney, 464.
 Guthrie, Mr. G. J., 328.
 Haffkine, Dr. Paul B., 592.
 Hager, Dr. C. R., 530.
 Halford, Sir Henry, 326.
 Hall, Dr. F. J., 549, 632.
 Hallam, Dr. R., 660.
 Halpern, Dr. F., 812.
 Halverson, Dr. S. Lavinia, 530.
 Han, Dr. C. H. (韓仲信), 675.
 Hanbury, Daniel, 429.
 Hannestad, Dr. K., 650.
 Happer Rev. Dr. A. P., 344, 372, 405.
 Happer, Commissioner, 511.
 Hara, Dr. C., 428.
 Hardey, Dr. E. P., 429.
 Harpur, Mr. C., 671.
 Harris, Nurse F., 561.
 Harrison, Miss Agatha, 661.
 Hart, Dr. E. H., 496, 497, 560.
 Hart, Mrs., 560.
 Hart, Sir R., 394, 395, 397-399, 547-548.
 Hartigan, Dr. Wm., 472, 475.
 Hartwell, Rev. J. B., 388.
 Haslep, Dr. Mary, 490.
 Hasselmann, Dr. C. M., 759.
 Hastings, Prof. A. B., 684.
 Hata, Dr. S. (秦佐八郎), 680, 681.
 Hatfield, Dr., 559.
 Haughwout, Dr. F. G., 680.
 Hayes, Dr. C. A., 625.
 Hearn, Dr. A. G., 578.
 Hearn, Mrs. T. A., 646.
 Heimbürger, Dr. L. F., 713.
 Heiser, Dr. V. G., 681, 720.
 Hemingway, Dr. W. A., 498.
 Henderson, Dr. E., 292, 400, 401, 402, 489.
 Henderson, Dr. J., 379-380.
 Henderson, Miss Maud, 560.
 Henderson, Dr. W. A., 295, 424, 494.
 Henry, Dr. A., 298.
 Hepburn, Dr. Jas. C., 345.
 Hequa, A. see Yau Hochun (游賀川).
 Hertig, Dr. M., 684.
 Hewett, Dr. J. W., 586.
 Hewit, Mr., 277.
 Hickin Dr. H., 446, 495.
 Hickson, J. M., 700.
 Hilarion, Archimandrite, 271.
 Hill, Dr. (Peking), 632.
- H**ackett, Mr. E. A. K., 541.
 Hadden, Dr. G., 615, 630, 675, 701, 772.
 Hadden, Dr. R. P., 714.

- Hill, Rev. D., 447, 502
 Hill, Dr. L. G., 499, 579
 Hills, Dr. O. F., 639, 649
 Hiltner, Dr. (Hangchow), 446
 Hiltner, Dr. W. G., 710
 Hirschberg, Dr. H. J., 346, 360-361
 Ho Kai, Sir Kai (何駱), 440, 471, 472, 475, 516, 818
 Ho King-mun (何敬文), 362, 363
 Ho Ko-tsun, Dr. (何高俊), 596, 612, 645
 Ho Tsz-hing, Dr. (何子敬), 541
 Hoag, Dr. Lucy H., 456, 478
 Hobson, Dr. B., 288, 321-323, 350, 358-366, 368-369, 375, 377
 Hodge, Dr. C. V. R., 533, 539
 Hodge, Rev. Dr. S. R., 464, 467, 494, 564
 Hodges, Dr. P. C., 636
 Hodgkin, Dr. H. T., 584
 Hoefling, Dr., 623
 Hofmann, Dr., J. Allen, 542, 625, 645, 692
 Hogg, Dr. A., 533, 578
 Holbrook, Dr. Marianna A., 461, 465
 Holgate, Dr. H., 313, 358
 Holman, Prof. E. F., 684
 Holmes, Lillian L., 557
 Holt, Prof. L. Emmett, 683
 Holt, & Co., 807
 Hong Song-mu (項松茂), 695
 Hook, Miss Marion, 535
 Hooper, Dr., 326
 Hopkins, Rev. Dr. N. S., 500, 549, 552, 577, 757
 Horder, Dr. E. G., 298, 499, 579
 Hou, Dr. S. M. (Hou Shi-min) (侯希民), 705, 765
 Hou Tzu-hua, Dr. (郝子華), 763
 Houghton, Dr. H. S., 607, 610, 613, 622, 635, 673, 675, 680, 684, 685
 Houston, Dr., 527
 How, Geo. K., 630
 How, Kyan-tsing (侯建興), 634
 How Loo (侯魯), 310
 Howard, Dr. H. J., 635, 647
 Howard, Dr. L. A. (Mrs. King), 425, 432, 443, 457-458, 465, 520
 Howe, Miss G., 521
 Howie, Dr. Jas., 503
 Howqua (Wu Yi-ho, 郝華即伍怡和), 282, 316, 320, 325, 335, 342
 Howqua, Son (郝華之子), 335, 344, 374
 Hoyte, Dr. S., 587
 Hsi Yin-dah (史蔭達), 634
 Hsia Chen-wen, Dr. (夏振文), 628
 Hsieh, Dr. E. T. (Hsieh En-tseng), (謝恩增), 634, 636, 644
 Hsiung Hsi-ling, Mr. (熊希齡), 667, 684
 Hsu, Mrs. (徐夫人), 443
 Hsu Hua-ching, Dr. (徐華清), 442, 543
 Hsu Kuang-chi (Ko Lau) (徐光啓), 263, 709
 Hsu Shih-chang, President (徐世昌), 603
 Hsu Shih-fang, Dr. (許世芳), 604
 Hsu Sung-ming, Dr. (徐崇明), 688
 Hsu Tzumo see Su-tzemi (徐之密)
 Hsueh Tu-pi, Mr. (薛篤弼), 719, 820
 Hu Hou-ki, Dr. (胡鴻基), 664, 722, 741, 743, 768, 773
 Hu Hsuan-ming see Dr. S. M. Woo (胡宣明)
 Hu, Taotai (胡道台), 438
 Hu Ting-an, Dr. (胡定安), 706, 722
 Hu Wen-hu, Mr. (胡文虎), 810
 Hu Yu-wei, Vice-Minister (胡毓威), 722
 Huang, Dr. Grace (黃惠光), 812
 Huang, Dr. M. L. (黃龍鳴), 705
 Huang, Dr. T. F. (Huang Tse-fang), (黃子方), 722, 727, 747, 763, 783
 Hubac, Dr., 354
 Hubbard, Rev. G. H., 478
 Hudson, G. F., 259, 260
 Huebotter, Dr. Fr., 261
 Hū King-eng, Dr. (胡金英), 521, 818
 Hugh, Dr. L., 624
 Hughes, Mr. W., 728
 Huizenga, Dr. L. S., 714
 Hume, Dr. E. H., 542, 584, 607, 610, 612, 614, 630, 673, 680, 681, 783.
 Hung, Dr. (Canton) (洪醫生), 546
 Hung, Dr. (Anking) (洪榮生), 559
 Hung Hua, Dr. (洪亨), 642
 Hung Liang-chi (洪亮吉), 507
 Hungerford, Dr., 439
 Hunt, Dr. Reid, 683
 Hunter, Dr. J. M., 433

Hunter, Rev. Dr. St. A., 435, 465, 468, 484
 Hunter, William C., 311
 Huntley, Dr. G. A., 543
 Hussey, Dr. C. G., 497
 Hutcheson, Dr. A. C., 614, 616
 Hwang Chen-foo (黃振南), 291, 292, 352
 Hyslop, Dr. Jas., 345
 Hyui, Dr. S. Z. (許松泉), 550

Ijima, Dr. (飯島), 648
 Ilipu (伊里布), 333
 Inaba, Dr. I. (内村), 767
 Ingle, Dr. L. M., 704
 Inglis, R., 320
 Ingram, Dr. J. H., 461, 549, 555, 644
 Ingram, Ruth, 640
 Ip Sheng-teng, Dr. (葉臣登), 546
 Irwin, Dr. A., 432, 441, 479, 480
 Irwin Dr. H. L., 637

Jackson, Dr. Arthur, 620
 Jackson, Dr. C., 326, 339.
 James Rev. Dr. J. S., 352.
 James Dr. Mary L., 613
 James, Surgeon-Major, 520
 Jamieson, Dr. R. A., 290, 291, 298, 397-399, 400, 402, 420, 427, 439, 453, 454, 469, 490
 Jardine, Dr. J., 458
 Jardine, Wm., 317, 319, 320, 326
 Jasinski, Dr. F. A., 569
 Jaurias, Hélène de, 381
 Jee, Dr. P. M., 607
 Jefferys, Dr. W. H., 549, 550, 563, 575, 643
 Jellison, Dr. E. R., 497
 Jenkins, Dr. H. Stanley, 582
 Jenner, Dr. Edward, 278, 280
 Jeremiassen, Carl C., 459-460, 487
 Jen Lok-nin, Dr. (任醫生), 308
 Jitta, Dr. N. M. J., 733
 John, Rev. Griffith, 534
 Johnson, Dr. C. F., 464, 480, 504, 525, 527, 554, 609, 670
 Johnson, Nurse Ella, 486
 Johnson, Nurse Frances, 501
 Johnston, Dr. James, 380, 402, 420

Johnstone, Surgeon, 313
 Jones, Dr. A. F., 586
 Jones, Dr. C. M., 395, 410, 414
 Jones, Dr. F. W., 684
 Jones, Miss (Dr.) M. D., 422
 Jordan, Dr. Gregory P., 472, 475
 Jordan, Dr. J. H., 744, 773
 Jordan, Sir John, 631
 Jorge, Prof. R., 733
 Jouveau-Dubreuil, Dr. H., 299
 Judson, Dr. H. Pratt, 633

Kadoorie, Sir Elly, 695
 Kahn, Dr. Ida (甘介侯), 521-522, 555, 604, 606, 610, 716, 818.
 Kanai, Dr. S. (金井), 571
 Kane, Dr. J. K., 336
 K'ang Hsi, Emperor (康熙), 265-266, 268, 271, 507, 817
 Kao, Mrs. (高太太), 558
 Kao Chi-liang (高繼良), 394, 447
 Kao, Dr. C. L. (高鏡明), 668, 671, 696
 Kao Shen, Mr. (高森), 678
 Kao, Dr. W. H. (高醫生), 768
 Kappers, Prof. C. U. Ariens, 683
 Karnievski, Dr., 272
 Kau, Dr. E. Y. (高恩義), 604, 630
 Keller, Dr. F. A., 583
 Kelley, Rev. Dr. D. C., 353
 Kelly, Dr. C. B., 637
 Kelly, Rev. Dr. Wm., 534, 580
 Kelsey, Miss (Dr.) A. D. H., 426
 Kemben, Dr. A. T., 446, 577
 Kemper, Mr., 410
 Kerr, Dr. J. G., 282-283, 285, 342, 343, 344, 368, 372-377, 391-394, 404-407, 446-447, 448, 464, 465, 468, 469-471, 482, 484, 485, 487-488, 517, 524-525, 527, 541, 545, 572.
 Key, Mr. Chas. A., 310, 328.
 Khaw, Dr. Oo-kek (許雨階), 738.
 Kiang, Dr. P. C., (江清), 623, 634, 678, 705.
 Kiang Tsu-fan (江子範), 591.
 Kilborn, Mrs. (Dr.) Gifford, 500
 Kilborn, Dr. O. L., 500, 527, 637.
 Kim, Dr. C. S. (金昌世), 665, 686.
 Kin, Dr. (Tientsin) (金大夫), 479, 520.
 King, Dr. (Pingyangfu), 587.
 King, Rev. A., 458.

- King, Dr. Frances, 774.
 King, Dr. J. L. (王完白), 668.
 King, Dr. P. Z. (金寶善), 727, 733, 739, 765, 768.
 King Ting-seng Mr. (金廷榮), 818.
 King, Miss Y. May see Dr. Yamei Kin, (金韻梅).
 Kinnear, Dr. H. N., 478, 486, 492.
 Kirillov, Dr., 271.
 Kirk, Dr. (Wei-hai-wei), 520.
 Kirk, Dr. John, 338, 464, 588, 625, 668, 673, 675.
 Kirk, Dr. E. W., 690.
 Kitasato, Prof. S. (北里柴三郎), 516, 592.
 Kiyung, (耆英), 333, 334.
 Ko Hung (葛洪), 261, 274.
 Koh, Dr. S. (郭醫生), 615.
 Konkle, Mr. H. N., 759.
 Kono, Dr. (小野一郎), 706.
 Koo, Dr. U. K. (古恩康), 550, 604, 623, 658.
 Korns, Dr. J. H., 288, 635, 636.
 Korrigán, Pol, 270.
 Koulecha, Dr. G., 593.
 Krieg, Dr. P. (克禮), 623, 648.
 Krolczyk, Rev. Adam, 375, 376, 377, 409.
 Krumling, Dr. F. C., 581.
 Kuang Hsunli, Dr. (鄺順利), 293.
 Kuang Yu, Dr. (鄺玉), 673.
 Kublai Khan (忽必烈), 261.
 Ku Chen, Dr. (顧忍), 646, 707.
 Kuehne, Dr. John, 501, 515, 530, 556, 580.
 Kuester, H., 355.
 Kui-tsong, Dr. (黃昌), 411, 412.
 Kung, Dr. (Peking) (孔醫生), 567.
 Kung, Dr. H. H. (孔祥熙), 695, 755.
 Kung, Dr. H. W. (孔憲武), 765.
 Kuno, Dr. Yas (久野), 684.
 Kuo, Dr. P. W. (郭秉文), 617, 668.
 Kuo Yuan-chi, Dr. (郭元琦), 693.
 Kurz, Dr., 623.
 Kwan, Dr. (Tientsin) (關醫生), 519.
 Kwan Ato (關杜亞), 317-318, 336, 340-341, 344, 368, 374, 391, 393, 405, 818.
 Kwan, Mr. S. S. (關先生), 712.
 Kwong Yu-jue, Mr. (鄺玉如), 490.
 Kyong, Dr. M. U. (龔慈恩), 523, 562.
 Kyuk Khan, 261.
- L**agrené, Th. M. M., 335.
 Lai, Dr. D. G. (賴斗岩), 669, 759.
 Lai Dok, Dr. (黎鐸), 689, 690.
 Lai Kai-hong, Dr. (黎解鴻), 285.
 Lai, Dr. S. W. (黎樹榮), 669.
 Lake, Rev. J., 655, 759.
 Lam, Dr. (Canton) (林醫生), 542.
 Lambert, Miss, 540.
 Lambuth, Rev. Dr. W. R., 436, 433-444, 464, 465.
 Lamqua (林華), 317, 325.
 Lam Tsung (林冲), 344.
 Lancaster, Dr. R. L., 709.
 Landi, Bishop, 581.
 Lang, Dr. G. Y., 713.
 Lang, Dr. J. C. R., 452.
 Langley, Dr. A. P., 430.
 Larsen, Dr. Anna, 504.
 Lassouarn, Dr., 663.
 Latourette, Prof. K. S., 367.
 Lau, Dr. C. F. (劉湛科), 601.
 Lau Chu-pak, Mr. (劉居白), 655.
 Lau, Dr. C. S. (劉港樂), 604.
 Lau Tak-ip, Dr. (劉德業), 546.
 Lau Tsz-wai, Dr. (劉子懷), 542.
 Lay, G. T., 319, 320, 326.
 Layng, Dr. H., 518.
 Layton, Dr. E. A., 586.
 Leach, Dr. C. N., 684.
 Leach, Dr. Ph., 520.
 Lebens, Miss J. E. M., 586.
 Lechler, Dr. J. H., 714.
 Lee, Dr. (Macao) (李醫生), 307.
 Lee An, Dr. (Yuan-po) (李晏) (元白) 646.
 Lee, Dr. C. O. (李醫生), 673.
 Lee, Dr. Claude M., 588.
 Lee Foh-sun, Dr. (李福生), 544.
 Lee Fuk-lam, Gen. (李福林), 708.
 Lee Shu-fan see Li Shu-fan (李樹芬)
 Lee, Mr. W. Y. (李元信), 665.
 Lee Ling, Prof. (李英), 617.
 Lee, Dr. Y. W. (李永和), 544, 604.
 Legge, Dr. Jas., Chronol. T., 1841.
 Leiper, Dr. R. T., 680, 681.
 Lemaitre, Father, 353, 381.

- Lennox, Dr. W. G., 615, 636, 669, 814, 816.
 Leo Teh-hsing, Dr. (廖德興), 644.
 Leonard, Dr. Eliza E., 493, 552, 557.
 Leslie, Dr. (Tientsin), 519.
 Leslie, Mr. Abr., 303.
 Leslie, Dr. O. C., 534.
 Lester, Mr. H., 807-808.
 Leung Ngai-man, Dr. (梁愛民), 659.
 Leung Kin-cho, Dr. (梁乾初), 482, 542.
 Leung Lok-shan (梁樂山), 553.
 Leung Man-shing (梁萬成), 408.
 Leung Shing, Sir (Cheng) (梁振東), 541.
 Lewis, Dr. Chas., 549, 579.
 Lewis, Dr. C. W., 591.
 Lewis, Dr. St. C., 581.
 Lewis, Dr. Timothy, 414, 415.
 Leybourn, Nurse A. L., 559.
 Li, Dr. (Teh-ngan-fu) (李醫生), 502.
 Li, Dr. (Y.M.C.A.) (李醫生), 615.
 Li, Med. Asst. (Fenchoufu), (李先生) 498.
 Li, Miss (Dr.) (李女醫師), 522.
 Li Ben-king, Dr. (李文興), 587.
 Li Chiu-bing, Mr. (李九明), 453.
 Li Fung-cho, Dr. (李忠佐), 625.
 Li Hsiao-po, Dr. (李英波), 651.
 Li Hung-chang, Viceroy (李鴻章), 869, 372, 432-433, 440-442, 454, 474, 475, 480, 519, 524, 531.
 Li, Dr. K. F. (厲家福), 646.
 Li, Dr. K. H. (李可儀), 675.
 Li Kha (李嘉), 419.
 Li Lien-ying (李蓮英), 547.
 Li Mung-hu, Dr. (李夢湖), 570.
 Li Pin-sze, Mr. (李平枝), 664.
 Li Ping-soo, Mr. (李平壽), 574.
 Li Shu-fan, Dr. (李樹芬), 596, 607, 645, 689-690, 813.
 Li Sing-yuan (李信元), 528.
 Li Ting, Dr. (李廷), 642.
 Li Ting-an, Dr. (李廷安), 657-658, 743, 749-750, 758, 776, 779, 780, 785.
 Li, Dr. T. L. (李清亮), 630, 634.
 Li, Dr. T. M. (李清茂), 550, 623, 634, 635, 636, 685.
 Li Tsun-fan (李春芳), 439.
 Liang Aliin (梁阿蓮), 341.
 Liang, Dr. K. T. (梁重良), 604.
 Liang San-wan, Dr. (梁少文), 614.
 Liang, Dr. S. Y. (梁心堯), 556.
 Liao, Dr. (Hochew) (廖醫生), 481.
 Lieu, Mr. O. S. (劉鴻生), 696.
 Lieu, Dr. T. C. (劉醫生), 630.
 Liljestrang, Dr. S. H., 637.
 Lim Boon-keng, Dr. (林文慶), 674, 818.
 Lim, Dr. C. E. (林宗楊), 674, 685, 769, 774, 775, 781, 820.
 Lim, Dr. R. K. S. (林可勝), 604, 679, 683, 685, 686, 768-769.
 Lin Kuo-keng, Adm. (林國燧), 732.
 Lin Lien-hui, Dr. (林聯輝), 441-442, 479.
 Lin, Dr. W. P. (林文秉), 667.
 Lincoln, Dr. C. S. F., 469, 523, 550, 574.
 Lindsay, Dr. A. W., 804.
 Ling, Dr. (Foochow) (林醫生), 525.
 Ling Pu-chi (林步基), 614.
 Ling, Mr. H. C. (林先生), 749.
 Lister, Lord J., 420.
 Liu, Dr. (Hangchow) (劉醫生), 577.
 Liu, Dr. (Peking), (劉醫生), 567.
 Liu, Dr. J. Heng (劉瑞恆), 562, 604, 606, 614, 622, 636, 642, 685, 695, 719, 722, 727, 729, 733, 738, 759, 751, 753, 754, 763, 764, 765, 766, 770, 773, 774, 777, 779, 783, 802, 807, 814, 820.
 Liu Jui-hua, Dr. (劉瑞華), 636, 685.
 Liu, Dr. L. T. (劉醫生), 567.
 Liu Ming-chuan, Gov. (劉銘傳), 504.
 Liu Ming-ts, Dr. (劉明之), 558.
 Liu Tak-san, Dr. (廖達山), 612.
 Livingstone, Dr. J., 304, 306-308, 817.
 Ljungstedt, Sir Andrew, 304, 306, 309, 311, 314.
 Lo Pa-hong, Mr. (陸伯鴻), 812.
 Lo Shau-wan, Dr. (羅少雲), 542.
 Lobscheid, Dr. W., 282, 343, 356.
 Lockhart, J. H. St., 516.
 Lockhart, Dr. W. 286, 289, 293, 321, 322, 323-324, 325, 327, 350-352, 369, 382-384, 388, 427.
 Logan, Dr. O. T., 534, 542, 565, 580, 607, 608, 611, 651.
 Loh, Dr. V. T. (樂文照), 696, 774.
 Loi Ching-hing, Mrs. (羅正興), 477.
 Loo, Mr. H. Y. (盧興原), 690.
 Lord, Customs Comm., 429.
 Louis, Rev. W., 409.

Lovitt, Dr. A. E., 539.
 Low, Dr. (Canton), 542.
 Low, Bruce, 513.
 Lowe, Nurse A. (羅護士), 561.
 Lowry, Dr. Geo. D., 444, 549, 552, 577.
 Lowry, Dr. J. H., 511-512, 519.
 Lowson, Dr. J. A., 515, 522.
 Lu, Dr. (呂醫生), 707.
 Lu Hai-huan, Mr. (呂海寰), 591.
 Lu, Dr. S. F. (盧施福), 707.
 Lucas, Mr., 475.
 Lucas, Rev. B. D., 544.
 Ludlow, Dr. W. L., 522.
 Luk, Med. Asst. (陸醫生), 408.
 Luk Kiang-fai, Dr. (盧鏡輝), 690.
 Lum Ats'ung, 368, 373.
 Lun So, Nurse see So Lun (蘇綸).
 Lunter, Father, 356.
 Luscher, Dr., 451.
 Lyall, Dr. Al., 424, 456, 464, 468.
 Lynch, Dr. A. R., 511.
 Lyon, Mrs. B. see Maw-fung Chung
 (鍾莫鳳).
 Lyon, Dr. Ellen (馬), 486, 559.

Ma Wun (馬援), 274.
 Macallum, Dr. A. B., 681, 683.
 Macartney, Earl G., 311.
 Macartney, Dr. (Sir) H., 371.
 MacBean, Dr. Jessie A., 639.
 Macdonald, Rev. Dr. R. J. J., 452, 465,
 500, 513, 537, 582.
 Macdonnell, Sir R. G., 402.
 MacGillivray, Rev. D., 563.
 Macgowan, Dr. D. J., 261, 274, 294, 297,
 346-350, 378, 386, 396, 421.
 Macgowan, Miss, M. D. (Nanking), 559.
 Macgowan, Miss Edith, 575.
 Machle, Dr. E. C., 503, 530, 542, 554,
 625.
 Macintosh, Miss I., 502.
 Mack, Miss, 659.
 Mackay, Dr. A. M., 495, 496.
 Mackay, Rev. G. L., 431, 503.
 Mackenzie, Dr. C. F., 301.
 Mackenzie, Dr. J. K., 430, 432, 440-443,
 450, 464, 465, 466, 479.
 Mackenzie, Dr. M., 295.
 Mackey, Dr. Maud A., 552.
 Macklin, Dr. Daisy, 533.

Macklin, Rev. Dr. W. E., 464, 465, 478,
 497, 536, 611, 617.
 Maclane, Minister R. M., 342.
 MacLay, Sir Joseph & Lady, 621.
 Macleish, Rev. Dr. A. L., 452, 464.
 Macleod, Dr., 490.
 MacNab, Dr., 520.
 MacWillie, Dr., 590.
 Madsen, Dr. T., 733.
 Dr. Mai (G. Mark) (麥信堅), 479.
 Main, Dr. D. D., 295, 445-446, 450, 464,
 495, 527, 555, 558, 577, 607, 609,
 640, 650, 699, 711, 760, 783.
 Main, Mrs., 558.
 Main, Mr. S. D., 773.
 Maitland, Dr. C. T., 662, 674.
 Mak Shui (麥瑞), 501.
 Malcolm, Dr. F. B., 503.
 Malcolm, Dr. W., 502.
 Manderson, Dr. Melissa, 552.
 Manful, Nurse E. M., 638.
 Manget, Dr. F. P., 652.
 Manson, Dr. D., 926, 386, 413, 414, 417,
 438.
 Manson, Dr. (Sir) P., 395, 396, 410-419,
 430, 431, 439, 448, 452, 470-476, 503.
 Mar Sergius, 261.
 Marjoribanks, Dr. S., 336.
 Mark, Dr. G. (麥信堅) (勵治), 480.
 Marques, Dr., 476.
 Marsh, Dr. E. L., 661.
 Marshall, Rev. C. K., (Dzau Tsz-seh)
 (曹志沂), 497.
 Marshall, Commodore, 342.
 Marshall, Dr. F. W., 496.
 Marston, Dr. Alice K., 493.
 Martin, Dr. W. A. P., 393, 632.
 Martini, Dr. E., 593.
 Mason, Dr. Letitia, 434.
 Massais, Dr., 401.
 Masters, Dr. Luella M., 525, 527.
 Masuda, Dr. T., 634.
 Mateer, Rev. C. W., 389, 446.
 Matheson, Mr. James, 327.
 Mathews, Dr. Percy, 464, 491.
 Mathewson, Dr. J. M., 460.
 Matignon, Dr., 425.
 de Mattos, Bro. E., 269.
 Mawbey, Rev. Dr. W. G., 430.
 Mawfung Chung, Miss E. (鍾莫鳳)

- (Mrs. Bayard Lyon), 561.
 Maxwell, Dr. (Chusan), 289.
 Maxwell, Dr. J. L., 389, 430-431.
 Maxwell, Dr. J. L. (Son), 399, 430-431, 562, 563, 577, 609, 611, 644, 669, 673, 676, 677, 710, 715, 759, 766, 771-772, 773, 774, 775, 782, 783, 808, 809, 814, 820.
 Maxwell, Dr. J. Preston, 581, 635, 686, 772.
 Maze, Sir F. W., 395, 729.
 Mazzolani, Dr., 581.
 McAll, Dr. P. L., 543, 564, 642, 703-704, 775, 782.
 McBride, Dr. F. E., 457, 495.
 McCallum, Mr. H., 475.
 McCandliss, Dr. H. M., 459-460, 487, 579.
 McCartee, Dr. D. B., 294, 347, 378, 379, 389, 419, 488.
 McCartney, Dr. J. H., 299, 481, 527.
 McCloy, Dr. Thos., 537.
 McClure, Dr. Wm., 502, 534.
 McCown, Miss (Dr.) R., 454.
 McCracken, Dr. J. C., 546, 672, 710, 768.
 McDonald, Dr. G. B. D., 495.
 McDonald, Dr. J. A., 638.
 McFarlane, Dr. E. P., 436.
 McFarlane, Dr. S. S., 479, 499, 501, 524.
 McIlvaine, Rev. J. S., 480.
 McKhann, Dr. C. C., 684.
 McKechie, Nurse Elizabeth, 449, 453.
 McKillican, Nurse J., 493, 557.
 McLean, Dr. F. C., 634, 635, 684.
 McOwan, Mrs., 532.
 McPhun, Dr. J. F., 461, 465.
 McWade, Consul, 545.
 Meadows, Dr. J. G., 565, 611.
 Meadows, Dr. R., 395.
 Medhurst, Rev. W. H., 321, 331.
 Meleney, Dr. H. E., 675.
 Meng, Mr. Moody (孟先生), 724.
 Menzies, Rev. Dr. J., 534.
 Merrins, Dr. E. M., 496, 536, 609, 611, 614, 670, 672, 676.
 Merritt, Dr. C. P. W., 458.
 Meuser, Mr. E. N., 637, 638.
 Michoud, Dr. J. L., 507, 509, 511.
 Miller, Dr. H. W., 583, 811.
 Miller, Dr. Iva M., 665, 666, 674, 678.
 Miller, Dr. Maude T., 583.
 Milles, Dr., 490.
 Mills, Mrs. C. R., Chronol. T., 1887.
 Mills, Dr. R. G., 635.
 Milne, Rev. W. C., 346, 385.
 Ming Ti, Emperor (明帝), 260.
 Mirabelle, Dr., 425.
 Miyajima, Prof. (北島), 726.
 Mo, Dr. (Canton) (莫醫生), 542.
 Mody, Mr. H. M., 477.
 Moffitt, Dr. A., 369-371.
 Mole, Dr. R., 620.
 Molyneux, Dr. J. F., 294, 529.
 Montauban, Gen., 369.
 Montecorvine, John of, 262.
 Moore, J., 274.
 Moore, Sister G., 653.
 Moorhead, Dr., 391.
 Morgan, Dr. L. S., 580.
 Morgan, Mr. F. A., 643.
 Morley, Dr. Arthur, 494, 502.
 Morris, Dr. H. H., 609, 614, 678, 773, 774.
 Morris, Nurse, 558, 640.
 Morrison, Dr. G. E., 607.
 Morrison, J. R., 320.
 Morrison, Mrs. Mary, Chronol. T. 1821.
 Morrison, Rev. R., 304, 306-308.
 Morrison, Dr. Wm., 356, 357.
 Morse, H. B., 279, 303.
 Morse, Dr. W. R., 637, 699.
 Mouillae, Dr. J. G., 579.
 Mount, Dr., 362.
 Mueller, Dr. August, 395, 410, 412.
 Muir, Dr. Ernest, 673.
 Mallowney, Dr. John J., 549, 567.
 Murdock, Nurse M., 561.
 Murdock, Miss (Dr.) V. C., 457, 465, 493.
 Murphy, St. J., 633.
 Murray, Dr., 283.
 Myers, Dr. Angie M., 549, 550.
 Myers, Dr. W. W., 296, 395, 419, 426, 431, 437-440.
 Na, Dr. (Peking) (那大夫), 567.
 Nacken, Rev. J., 409.
 Nagayo, Dr. M. (長興), 680.
 Nairn, Dr. Wm. M., 620.

Napier, Lord W. J., 312
 Nathan, Sir Matthew, 476
 Na T'ung, Councillor (那桐), 547, 631
 Neal, Dr. James Boyd, 446, 464, 465, 468, 480, 485, 493, 504, 526, 527, 528, 540, 553, 554, 555, 562, 608, 610, 642, 644, 697
 Neidhardt, Mr., 475
 Neild, Dr. F. M., 678
 Neville, Dr. W. S., 620
 Neville-Rolfe, Mrs. C., 660
 New Way-ling, Dr., 604, 710, 818
 牛嘉霖
 New, Dr. W. S. (牛嘉生), 550, 604, 607, 622, 623, 636, 676, 678, 710, 758, 763, 773, 774-775, 777-778, 811, 818
 Newell, Dr. Mary, 575
 Newman, Dr. H. W., 711.
 Newsholme, Sir Arthur, 720.
 Ng Li-hing, Mr. (伍麗興), 477.
 Niebel, Dr. B. E., 640.
 Nieberg, Dr. Frances E. (also Mrs. Goddard), 477.
 Nieh, Mr. C. C. (聂其杰), 658, 667
 Niles, Dr. Mary W., 451, 482, 486, 514, 541, 542, 555, 644.
 Nilssen, Dr. J. E., 583.
 Niu Kien (紐建), 333.
 Noble, Dr. W. C., 493.
 Nottage, Dr. H. P., 708.
 Nye Sik-pang, Dr. (倪錫鵬), 546, 573.
 O'Donnell, Miss (Dr.) F., 580.
 Oei I-tjoe, Mr. (黃奕佳), 749.
 Ogden, Miss M. R., 558.
 Oldt, Dr. F., 546, 658-659, 674, 676, 709.
 Olesen (?Olsen), Dr. Birger, 591.
 Olpp, Dr. G., 580.
 Oltmans, Dr. A., 759.
 Olyphant, Mr. D. W. C., 315.
 O'Neill, Dr., 585.
 Oong Tze-loong, Dr. (翁之龍), 743.
 Osborne, Dr. D. E., 462.
 Osgood, Dr. D. W., 355, 421-422, 435, 455, 484, 485.
 Osgood, Dr. Elliott I., 537, 582, 608, 610.
 Otte, Dr. J. A., 502, 527, 530-531.

Padlewski, Dr. L., 592.
 Pai, Dr. (Tientain) (白醫生), 432.
 Pailing, W. P., 698, 804.
 Palmborg, Dr. Rosa W., 491.
 Palmer, Rev. Dr. W. S., 452.
 P'ang Ching-chow, Dr. (龐京周), 624.
 Pantin, Dr. Mabel, 585.
 Paris, Bishop Prosper, 575.
 Park, Dr. C. L., 727, 730.
 Park, Dr. W. H., 443-444, 464, 465, 497-498, 527, 544.
 Parker, Rev. A. P., 443-444.
 Parker, Dr. John, 378.
 Parker, Rev. Dr. P., 288, 314, 315-318, 319-321, 324-330, 334-343, 405, 465, 488, 781.
 Parker, Mrs., 334.
 Parker, Dr. Wm., 350, 378.
 Parkes, Sir Harry, 388.
 Parrenin, Father D., 266-267.
 Parrott, Dr. A. G., 504.
 Parry, Dr. H. R., 500.
 Parsons, Miss, 493.
 Paterson, Dr. (Wuchang), 590.
 Paterson, Dr. J. L. H., 773, 774, 783, 808.
 Paterson, Dr. Th. C., 554.
 Paton, Dr. B. L., Chronol. T., 1890.
 Paton, Mr. W. P., 327.
 Patterson, Mrs. (Dr.) B. C., Chronol. T., 1891.
 Patterson, Dr. G. D., 426.
 Paty, Dr. R. M., 655.
 Paulun, Dr. E. H., 551.
 Payne, Miss Jessie E., 552.
 Peabody, Dr. F. W., 633, 680, 681, 683.
 Peake, Dr. E. C., 583.
 Pearce, Dr. Louise, 684.
 Pearce, Dr. R. M., 684.
 Pearson, Dr. Alex., 277-282, 283, 303, 304, 306, 307, 308, 310, 327, 427, 817.
 Peck, Dr. A. P., 458, 465, 578.
 Pederson, Dr. P. B., 620.
 Pei, Dr. S. Y. (裴錫生), 707.
 Peill, Dr. A. D., 585.
 Peill, Dr. E. J., 549.
 Pelisson, Father, 267.
 Pellet, Dr. 545.

- Peng, Dr. (Liling) (彭大夫), 640.
 Peng Shu-tze, Dr. (彭樹之), 642.
 Pereyra, Father Th., 266, 817.
 Perkins, Dr. H. Mason, 480, 490.
 Perry, Fr. O. H., 376.
 Perthes, Dr., 540.
 Peter, Dr. W. W., 606, 607, 610, 611, 613, 615, 660, 667, 668, 672, 676, 677, 678, 681, 710.
 Petick, Mr. W. N., 440.
 Phillips, Dr. Mildred, 444, 465.
 Phillips, Dr. E. Margaret, 588, 610, 652.
 Phillips, Dr. W., 532.
 Piercy, Rev. G., 373.
 Pirls, Dr. Wm., 495.
 Platt, Dr. A. R., 428.
 Plummer, Dr. W. E., 578.
 Polk, Dr. Margaret H., 544.
 Pon, Dr. K. C., see P'ang Ching-chow (龐京周)
 Poole, Dr. W., 539, 540.
 De La Porte, Dr., 382.
 Porter, Rev. Dr. H. D., 433, 458, 465, 484, 485, 578.
 Pott, Rev. F. L. Hawks, 381.
 Pott, Dr. W. H., 714.
 Pottinger, Sir Henry, 333, 358.
 Poulter, Dr. Mabel C., 536, 559.
 Powell, Nurse, 557.
 Powell, Mr. R. W., 630.
 Pray, Dr. Susan R., 486.
 Freedy, Mr. A., 586.
 Preston, Dr., 439.
 Preston, Rev. C. F., 405.
 Primrose, Miss A., 639.
 Pritchard, Dr. E. T., 470.
 Pruen, Dr. W. L., 500.
 Pu, S. Y. (浦先生), 638, 699.
 Pulart, 271.
 Pumphrey, Miss R. A., 646.
 Puo Tsing-chung, Dr. (浦清忠), 444.
 Pwantinqua (潘鼎華), 282, 286, 342.
 Rabaute, Dr. J., 746.
 Rajchman, Dr. L., 720, 726-727, 820.
 Rand, Dr. L. P., 717.
 Randle, Rev. Dr. H. A., 426, 504, 527, 535.
 Rankine, Dr. D., 495, 577.
 Ransom, Dr. S. A., 678.
 Rastello, Dr. G., 581.
 Rauppach, Dr. F. von, 570.
 Raynal, Dr. J., 746.
 Read, Prof. B. E., 632, 635, 673, 724, 783, 809.
 Rees, Rev. J. L., 523.
 Rehmann, Dr., 276.
 Reid, Dr. A. G., 395, 430, 457.
 Reid, Dr. Duncan, 490, 523.
 Reid, Dr. Gilbert, 811.
 Reid, Prof. Mont R., 683.
 Reifsnyder, Dr. Elizabeth, 463, 464, 465, 467, 491.
 Reinsch, Dr. P. S., 635.
 Reiss, Dr. F., 759, 773, 775.
 Rennie, Dr. A., 514.
 Rennie, Dr. T., 295, 422, 431, 455, 491, 492.
 Requa, Dr., 475.
 Reygondaud, Dr., 536.
 Rhazes, 274.
 Rhodes, Bro. B., 267.
 Ricci, Father Matteo, 263.
 Richard, Timothy, 571.
 Ricou, Dr., 545.
 Riddel, Rev. Dr. W., 461, 465.
 Rigg, Dr. John, 501-502.
 Ringer, Dr. B. S., 418.
 Roberts, Dr. Fred C., 479, 499.
 Robertson, Prof., 611.
 Robertson, Dr. Cecil, 582.
 Robertson, Dr. H. Rennie, 519.
 Robertson, Dr. O. H., 635.
 Robertson, Dr. R. Cecil, 773, 780, 785, 809.
 Robertson, Dr. S., 620.
 Robins, Surgeon-Major, 475.
 Robinson, Sir G., 326.
 Robinson, Sir Wm., 475, 516.
 Rocher, Mr. E., 507-508, 510.
 Rockefeller, Mr. John D. Jr., 633, 680, 819.
 Rockhill, Mr. W. W., 547.
 Rodier, Dr. E. A., 763.
 Rose, Dr. G., 782.
 Ross, Miss (Dr.) A. M., 492.
 Ross, Dr. Margaret T., 659.
 Ross, Dr. R. M., 689.

- Rousset, Bro. E., 268.
 Roys, Dr. Chas. K., 611, 644.
 Russell, Lt.-Col. A. J. H., 784.
 Russell, Dr. Gavin, Chronol. T., 1880.
 Russell, Rev. W. A., 379.
 Russell, Dr. W. B., 616, 655.
 Rustomjee, Mr. H., 313.
Sabin, Dr. Florence R., 680, 681.
 Sage, E. C., 633.
 Saguez, Bro., 353.
 Sah Sze-chieh, Dr., (薩子階), 642.
 Samson, Mr. Frank, 812.
 San A-on (岑亞安), 362.
 San Liu-hsi, Dr. (洗柳錫), 688.
 Sanger, Mrs. Margaret, 761.
 Sargent, Dr. Clara, 615.
 Satow, Sir Ernst, 547.
 Saville, Dr. Lillie E. V., 529.
 Von Schab. Dr., 551, 623.
 Schiefflin, H. M., 340.
 Schlingler, Dr., 551.
 Schofield, Dr. R. H. A., 459.
 Van Schoick, Dr. J. L., 480, 504.
 Schultze-Jena, Dr., 623.
 Schwab, Mr. & Mrs. L., 638.
 De Schweinitz, Dr. G. E., 680.
 Scott, Dr. (Canton), 393.
 Scott, Mrs. (Dr.) A. K., 492.
 Scott, Dr. C. M., 395.
 Scott, Dr. E. I., 296, 527.
 Scott, Dr. Robina, 717.
 Seckinger, Father, 381, 431.
 Selden, Dr. Chas. C., 541, 542, 546, 572, 689.
 Selmon, Dr. A. C., 583.
 Selmon, Dr. Bertha L., 583.
 Sen, General, 520.
 Seto Chio, Dr (司徒朝), 707.
 Seto Poh, Dr. (司徒博), 658.
 Service, Dr. C. W., 535, 637.
 Severance, Mr. Louis, 494.
 Severn, Dr. Millott, 508.
 Seymour, Dr. Walter F., 493, 528, 651.
 Sham Chun-hun, Gov. (岑春萱), 580.
 Shao Fu-yin, Mr. (蕭福英), 603.
 Shapleigh, Dr. Elizabeth, 710.
 Shattuck, Dr., 326.
 Shaw, Mr. Chas., 351.
 Shearer, Dr. G., 395, 430.
 Shen Bu-chow, Mr. (沈步洲), 643.
 Shen En-fu, Mr. (沈恩孚), 643.
 Shen Sze-jen, Dr. (沈醫生), 634.
 Shen Tun-ho (沈敦和), 575, 590, 591.
 Sheng Hsuan-huai (盛宣懷), 571.
 Sheng Tsai-hang, Dr. (盛才恆), 642.
 Sherwin, Dr., 395.
 Shi Mui-hing, Dr. (施梅興), 541.
 Shibayama, Prof. G. (千葉山), 592.
 Shibley, Dr. G. S., 630.
 Shields, Dr. R. T., 552, 553, 617, 642, 643, 644.
 Shiga, Dr. K. (志賀潔), 675, 680.
 Shih, Mary H. E. (施錫恩), 562.
 Shih Tao-nan (師道南), 507.
 Shillaber, Miss, 311.
 Shillitoe, Dr. R., 395.
 Shire, Miss (Dr.) M. J., 575.
 Shoemaker, Dr. A., 608.
 Shrubshall, Dr. W. W., 495.
 Shu Hua-hu, Dr. (舒華湖), 697.
 Shu, Dr. H. J., (Suvoong) (舒厚仁), 484, 606, 818.
 Shu Kuei-ting, Dr. see W. T. Watt (屈桂庭).
 Shumaker, Rev. Dr. H. K., 530.
 Siao, Dr. T. K. M. (蕭智吉), 523, 555, 562, 604, 614, 623, 658, 696, 774, 818.
 Siddall, Dr. A. Clair, 709.
 Simmons, Dr. D. B., 386, 387.
 Simpson, Dr. (Sir) J. Young, 340.
 Simpson, Nurse Charlotte, 583.
 Simpson, Miss Cora E., 486, 559, 560, 561, 672.
 Simpson, Dr. F., 620.
 Simpson, Dr. W. J., 512.
 Sinclair, Dr. Marian, 493.
 Sircar, Dr. Ram Lall, 300-301, 508, 586, 653.
 Sison, Dr. A., 680.
 Sjoqvist, Dr. J., 583.
 Skinner, Dr. A. H., 563.
 Skinner, Dr. J. E., 482, 587, 715.
 Slack, Prof. H. R., 683.
 Van Slyke, Dr. D. D., 683.
 Smith, Dr. Emily D., 576.

- Smith, Dr. F. Porter, 389, 428-429.
 Smith, Dr. G. P., 479, 520.
 Smith, Dr. H. R., 480.
 Smith, Dr. J. A. C., 537.
 Smith, Rev. Dr. J. Frazer, 502.
 Smyly, Dr. H. J., 610, 635, 636.
 Smyly, Sir Wm., 680.
 Smyth, Dr. R. S., 489, 529.
 Snell, Dr. John A., 578, 609, 616, 775, 781, 814-815.
 So Lun, Nurse (蘇倫), 503.
 So To-meng, Dr. 377, 406, 487, 541, 542, 546, 553.
 Somerville, Dr. J. R., 295, 395.
 Soong, Mr. T. V. (宋子文), 729.
 Sparr, Miss (Dr.) J. E., 422.
 Spear, Rev. Dr. Wm., 343.
 Spooner, D. N., 339.
 Spreng, Dr. R. W. E., 713.
 Stanley, Dr. Arthur, 400, 428, 519, 564, 592, 606, 607, 608, 610.
 Stanton, Rev. V., 360.
 Staunton, Sir George Th., 326, 328, 277-278.
 Stenhouse, Dr. D., 436.
 Stenhouse, Dr. J. M., 549.
 Stevens, Mrs., 529.
 Stevens, Dr. Juliet N., 549, 575.
 Stewart, Dr. J. A., 387-388.
 Stewart, Dr. J. C. 465.
 Stone, Dr. Mary (Shih Mei-yu) (石美玉), 521-522, 604, 634, 658, 818.
 Stone, Dr. Phoebe (石非比) 522.
 Stone, Dr. R. S. 636.
 Stooke, Dr. G. F. 577.
 Stouman, Dr. K. 727.
 Strange, Dr. C. F. 446.
 Strong, Dr. R. P. 592.
 Stryker, Dr. Minnie, 576.
 Stuart, Surgeon-Capt. 475.
 Stuart, Rev. Dr. G. A. 464, 465, 478, 496, 523, 527, 555, 643, 645.
 Stuart, Mr. Maxwell, 761.
 Stubbett, Dr. J. E., 460.
 Stuckey, Dr. E. J., 813.
 Sturton, Dr. S. D., 446.
 Su-tzemi (徐子賈), 884-885.
 Sugden, Miss, 494.
 Sun, Dr. C. Y. (沈乾一), 556.
 Sun Fo (孫科), 695, 812.
 Sun Pao-chi, Gov. (孫寶琦), 636, 684.
 Sun Ssu-mo (孫思邈), 261.
 Sun Te-chang (孫德彰), 447.
 Sun Yat-sen, Dr. (孫逸仙), 447-449, 475-476, 708, 781.
 Sun Yuen-fel, Mr. (孫雲飛), 624.
 Sung, Dr. Chih-ai (宋志愛), 730.
 Sung Hsin-ching, Mr. (宋新慶), 642.
 Sung Jui-ch'ing, Nurse, 561.
 Suvoong, Dr. V. P. (舒厚仁)
 see H. J. Shu.
 Swain, Dr. A., 814.
 Swallow, Rev. Dr. R., 420, 489.
 Swan, Dr. A. H., 710.
 Swan, Dr. John, 465, 487, 524, 545-546, 572, 647.
 Swinney, Dr. Ella F., 454, 491.
 Syle, Mr., Chronol. T., 1845.
 Syle, Rev. E. W., 381.
 Sze Liang-tsi, Mr. (史量才), 695.
 Szu-ma Ch'ien (司馬遷), 259.
- T**aft, Dr. Gertrude (戴醫生), 456.
 Tan Yi-hsing (譚益興), 284.
 Tang Er-ho, Dr. (湯爾和), 599, 614, 627, 642, 643, 766.
 Tang, Dr. N. A. (唐乃安), 604, 606, 642.
 Tang Tsung-nien, Dr. (鄧松年), 730.
 T'ao Hung-ching (陶鴻經), 261.
 Tarbell, Dr. W. E., 434.
 Tartarinov, Dr. A., 271.
 Tatchell, Dr. W. Arthur, 557, 538.
 Tating, Dr. King (金大廷), 467.
 Taung, Miss (Dr.) (唐女醫師), 559.
 Taylor, Dr. (Hinghwa), 534.
 Taylor, Dr. (Mukden), 620.
 Taylor, Dr. A. S., 635.
 Taylor, Dr. B. van S., 436, 462.
 Taylor, Rev. Dr. Chas., 353.
 Taylor, Dr. F. H., Chronol. T., 1890.
 Taylor, Dr. Geo. Yardley, 493, 533, 539.
 Taylor, Nurse Hazel, 665.
 Taylor, Dr. H. B., 558, 674, 701.
 Taylor, Dr. Howard, 535.
 Taylor, Rev. Dr. J. Hudson, 350, 353, 379, 382, 426, 433.
 Teague, Dr. O., 592.

- Teng, Dr. (Kweiyangfu) (鄧醫生), 651
 Terrentius, Father J., 264
 Terry, Dr. Edna G., 500, 520
 Thacker, Dr. Louisa G., 560
 Thomas, Nurse B. A. M., 559
 Thompson, Dr. H. G., 772, 773, 775, 809
 Thomson, Dr. Alex., 423
 Thomson, Rev. E. H., 420, 453
 Thomson, Dr. J. A., 563, 565
 Thomson, Dr. John C., 474, 475, 477, 522, 527
 Thomson, Rev. Dr. Jos. Clarke, 307, 338, 451, 464, 465, 467, 468, 477, 484, 487
 Thomson, Dr. J. O., 625, 647, 709
 Thomson, Dr. Ruth McConn, 530
 Thoulon, Dr. A., 513
 Thue, Dr. Hans 591, 622
 Thwing, Prof. E. P., 469
 Thwing, Rev. E. W., 566
 Ting Fu-pao, Dr. (Ting Foh-pao) (丁福保), 555, 556, 604
 Ting, Mayor V. K. (丁文江), 664
 Ting, Dr. W. K. (丁醫生), 707
 Tiong-seng (東成), 419
 Todd, Nurse Margaret S., 638
 Todd, Dr. P. J. (塔德), 553, 608, 609, 625, 645, 689 ———— 連保龍
 Tomlinson, Miss S. C., 558
 Tong Shao-yi, Mr., (唐紹儀) 665
 Tooker, Dr. F. J., 610
 Tootell, Dr. G. T., 652, 716
 Townsend, Dr. O. S., 530
 Trask, Dr. Sigourney L., 422, 455
 Treat, Dr. A. O., 425, 432, 460
 Trimble, Dr. C. G., 487
 Tsai, Dr. (Soochow) (蔡醫生), 616
 Tsai, Miss (Peking-Shanghai) (蔡護士), 665
 Tsai, Mrs. (Tientsin) (蔡夫人), 443
 Tsai Hung, Dr. (蔡鴻), 727
 Tsai Ting-kan, Admiral (蔡廷幹), 684, 711
 Tsai Yuan-p'ei, Mr. (蔡元培), 684
 Tsang, Dr. (Hangchow) (章醫生), 577
 Tsang Pao-gie, Dr. (張葆琪), 544
 Tsao, Dr. (Liling) (曹女醫師), 640
 Tsao, Dr. (Nanking) (曹醫生), 617
 Tsao, Prof. (Wuhan) (曹博士), 590
 Tsao, Dr. H. C. (曹醫生), 768
 Tsao Li-yuen, Dr. (曹麗雲), 604, 606
 Ts'ao Yung-kuei, Dr. (曹詠歸), 444, 493, 523
 Tsay, Miss Queenie (蔡護士), 640
 Tsen, Dr. E. T. H. (Tsen Tsung-hsien) (陳宗賢), 602, 623, 634, 636, 671
 Tseng, Prefect (鄭知府), 286
 Tseng, Dr. Annie P. A. (鄭醫生), 811
 Tseng Hsien-chang, Nurse (曾憲章), 752
 Tseu, Mr. (邱先生), 574
 Tso, Dr. Agnes (左女醫師), 652
 Tso, Dr. K. S. Peter (祝醫生), 523
 Ts'u Ming-yi (Dr. M. Y. Tsu) (精民誼), 695, 706, 722, 768
 Ts'u Yung-chiu see W. T. Watt (屈永秋)
 Tsur, Dr. Y. T. see Chou Yi-ch'un (周詒春)
 Tsurumi, Dr. M. (鶴見), 680
 Tu Yueh-seng, Mr. (杜月笙), 813
 Tuan Fang, Viceroy (端方), 551, 568
 Tucker, Dr. Alfred, 356, 358, 359
 Tucker, Dr. A. W., 550, 565, 575, 696
 Tucker, Dr. Emma B., 578
 Tucker, Dr. F. F., 578
 Tuffier, Dr. T., 680, 681
 T'ung-Chi, Emperor (同治), 287
 Tung Dja-mu, Dr. (董作霖), 623
 Tunzelmann, Dr. E. W. von, 494
 Tupin, Mr. (渡邊久), 646
 Turnbull, Dep.-Insp.-Gen., 475
 Turner, Messrs., 351
 Turner, Capt. Samuel, 279, 296
 Turner, Mr. Skinner, 618, 660
 Twrdy, Father J., 270
 Tyan, Dr. E. S. (刁信德), 549, 550, 555, 604, 605, 607, 610, 614, 622, 658, 668, 818
 Tze Tsan-hsi, Duke (齊公爵), 684
 U
 Mi-tak, Dr. (于美德), 541
 Underwood, Dr. G. R., 513

- V**adon, Dr., 585
 Vallet, Dr., 585
 Van, Dr., 616
 Vandeweg, Dr. M., 655
 Vaughan, Dr. J. G., 564
 Velde, Dr., 539
 Venable, Dr. W. H., 464, 505, 552, 555, 611, 644, 654
 Vincent, Dr., 328
 Vincent, Dr. G. E., 681
 Visdelou, Father Claude de, 266
 De Vol, Dr. Geo. F., 582
 De Vries, Dr. E., 775

Waart, Dr. A. de, 680
 Wade, Dr. H. W., 759, 775
 Wagner, Dr. E. R., 503
 Wakefield, Mr. C. E. S., 592
 Wales, Dr. J. F., 514, 515, 599
 Wallace, Dr. E. W., 674
 Wallace, Dr. Margaret S., 534
 Walter-Fearn, Dr. Anne, 544
 Walton, Dr., 535
 Wampler, Dr. F. J., 674, 677, 714
 Wan Taun-mo, Dr. (溫天謀), 469, 482, 484
 Wang, Dr. (Peking) (王醫生), 567
 Wang, Vaccinator (王醫生), 296-297, 298
 Wang, Dr. Amos (王逸慧), 762
 Wang Asui (王亞瑞), 341
 Wang, Dr. C. C. (王企純), 680, 706
 Wang Chung-fu-Hwang Chen-foo (黃振甫), 292, 352
 Wang Ch'ing-jen (王清任), 366
 Wang Chung-yik, Dr. (王寵益), 627
 Wang Fok Chen, Nurse (汪福貞), 561
 Wang, Kwei-ling, Mr. (王桂林), 616
 Wang, Dr. L. S. (王醫生), 712
 Wang, Dr. P. Y. (王醫生), 713
 Wang Shih-chieh, Minister (王世傑), 777
 Wang, Dr. S. T. (王錫熾), 765
 Wang, Dr. T. H. (王祖祥), 747, 779
 Wang Tan (王旦), 274
 Wang Tsing-an, Dr. (王慶安), 617
 Wang Wen-ming, Dr. (王文明), 585
 Waples, Dr. (? Wagner), 495
 Warner, Dr., 330
 Warnshuis, Rev. A. L., 410
 Warren, Dr., 326
 Watson, Dr. A. J., 714
 Watson, Miss A. R., 639
 Watson, Dr. J., 395
 Watson, Dr. J. R. & Mrs. A. R., 499, 527, 554
 Watson, Mr., 475
 Watson, Dr. W., 446
 Watson, Mr. W. H., 593
 Watt, W. T. (Shu Kuei-ting) (屈桂庭), 479, 818
 Waung Koh-toong (王蘭東), 550
 Webster, Mr. Daniel, 334
 Weidenreich, Dr. F., 684
 Weiku, 261
 Wei Kok, Dr. (魏固), 708
 Wei Likun, Dr. (魏立功), 570
 Welch, Prof. W. H., 630, 633, 680, 681
 Wellcome, Mr. Henry S., 564
 Welton, Rev. Dr. Wm., 355, 382
 Wenham, Dr. H. V., 549, 568, 632
 Wenyon, Rev. Dr. Chas., 451-452, 464, 469
 Werthern, Dr. E. Frh. von, 554
 Westcott, Surgeon-Major S., 522
 Westwater, Dr. A. M., 456, 500, 572
 Westwater, Rev. A., Chronol. T., 1886
 Wheeler, Dr. E. R., 549, 598, 634
 Whitacker, Nurse, 497
 White, Rev. Moses C., 355
 White, Dr. F. Norman, 726
 White, Dr. R. G., 298
 Whitewright, Rev. J. S., 565
 Whitney, Dr. H. T., 435, 455, 464, 465, 468, 477-478, 484, 485, 491, 492, 525, 557, 555, 576, 588
 Whyte, Dr. G. Duncan, 608, 613, 614
 Wick, Dr., 587
 Wieger, Dr. Leon, Chronol. T., 1887
 Wiley, Rev. Dr. I. W., 355
 Wilford, Dr. E. C., 637, 699
 Wilkinson, Dr. J. R., 524, 552, 783
 Williams, Mr. J. W., 630
 Williams, S. Wells, 458
 Williams, Dr. T. E. H., 441, 475
 Williamson, Rev. Alex., 504

- Williamson, Mrs. J., 453
 Willingdon, Lord, 766
 Wills, Dr. E. F., 537
 Wilson, Dr. Millar 539, 587
 Wilson, Dr. Wm., 461, 498
 Withers, Miss L. A., 638
 Wittenberg, Dr. H., 505
 Wo Qun-zie, Nurse (吳護士), 490, 575
 Wolf, Anne Dryden, 640
 Wolf, Miss M. K., 640
 Wolfendale, Dr. R., 534
 Wong, Miss (S'hai) (黃女士), 490
 Wong, Mr. (黃先生), 608
 Wong, Dr. A. M. (黃瓊仙), 604, 658
 Wong, Dr. B. Y. (王培元), 591
 Wong, Mr. C. J. (王先生), 749
 Wong Fong (王方), 408
 Wong Fun, Dr. (黃寬), 284, 371-372, 373, 385, 391, 392, 395, 405, 488, 818
 Wong Dr. F. S. (王福星)(拱辰), 732, 775
 Wong Hang-tong, Dr. (王肯堂), 625, 689
 Wong Hung-yan, Dr. (王洪仁), 690
 Wong Jen Tze, Mr. (王恩之), 642
 Wong, Dr. K. C. (王吉民), 274, 275, 659, 667, 707, 772
 Wong, Dr. K. T. (王光宇), 550
 Wong King-yip, Dr. (王醫生), 625
 Wong, Dr. M. (王醫生), 517
 Wong, Dr. P. C. (王弼臣), 642
 Wong, Dr. Ross, 692
 Wong Shing (黃先生), 371
 Wong Se-kim, Mr. (黃錫金), 749
 Wong, Dr. S. P. (黃勝白), 646
 Wong Sin-shan (黃先生), 409, 542
 Wong, Dr. S. Y. (黃醫生), 636
 Wong Tai-kong, Dr. (王大江), 553
 Wong, Dr. T. U. (汪暢子), 556
 Wong Tsung-mei, Dr. (王寵美), 642
 Wong Yun-shan (王雲山), 409
 Wong Zeh-nien, Dr. (王子年), 642
 Woo, Dr. A. W. (胡惠德), 464, 636, 676, 770-771, 774, 818
 Woo, Rev. H. N. (鄺洪圖), 420-421, 486
 Woo, Ho-sze, Mr. (胡和之), 642
 Woo, Dr. L. S. (胡蘭生), 623
 Woo Nguok-ing, Dr. (胡玉英), 525
 Woo, Dr. N. Z. (胡醫生), 523
 Woo, Dr. S. M. (胡宜明), 597, 613, 615, 623, 657, 658, 667, 672, 676, 680, 773
 Woo, Dr. T. H. (吳道瀚), 550
 Woodhull, Dr. Kate C., 456, 477, 525, 564
 Woods, Dr. A. H., 573, 635, 646, 647
 Woods, Dr. Edgar, 502, 580
 Woods, Dr. James B., 502
 Woodward, Dr. E. L., 558
 Woodworth, Dr. C. W., 671
 Woolsey, Dr., 481
 Worley, Dr. R. E., Chronol. T., 1903
 Worth, Dr. G. C., 552
 Wright, Dr. J. M., 625, 690
 Wu, Dr. (Peking) (吳醫生), 567
 Wu, Dr. (Peking) (吳醫生), 577
 Wu, Nurse (Changsha) (吳護士), 617
 Wu, Mrs. (S'hai) (吳夫人), 665
 Wu Achung (伍亞忠), 392, 405
 Wu, Dr. C. Y. (伍長權), 708, 730, 775, 784
 Wu Hsien, Dr. (吳憲), 679, 680, 685, 686
 Wu Hsin-huang, Dr. (吳欣璜), 624
 Wu Lien-teh, Dr. (伍連德), 563, 592, 595, 597, 603-604, 606, 607, 610, 611, 613, 614, 615, 649, 667, 671, 680, 712, 727, 729, 733, 758, 762, 763, 773, 775, 781, 784, 785, 820
 Wu, Nurse Mildred (伍護士), 634
 Wu Pao-kwang (吳葆光), 614
 Wu, R. N. Lillian (伍哲英), 634, 768
 Wu, Rev. T. C. (鄺志堅), 665
 Wu Te-chen, Mayor (吳鐵城), 695, 758, 762
 Wu Ti (武帝), 259
 Wu Ting-fang (伍廷芳), 541, 655, 667, 811
 Wu Ting-fang, Mme. (伍廷芳夫人), 476
 Wu Tunyuen see Howqua 伍東元
Xavier, Francis, 263, 655
Yamei Kin, Dr. (金韻梅), 347, 488, 557-558, 818
 Yandell (Dr. Yang Vee Yuer) (楊維翰), 544, 555
 Yang, Dr. (Ningpo) (楊醫生), 348

- Yang, Mrs. (Changsha) (楊夫人), 617
 Yang, Dr. Marion (楊崇瑞), 751-752, 761
 Yang Shao-kuen, Nurse (楊紹坤), 561
 Yang Ta-chung, Dr. (楊達昌), 685
 Yang Taki, Mr. (楊啓生), 381
 Yang Tuk-pau (楊德寶), 614
 Yang, Dr. Z. L. (楊醫生), 549
 Yao Hsun-yuan, Dr. (游勳元), 664
 Yao, Dr. P. L. (姚伯麟), 646
 Yates, Rev. M. T., 454
 Yauhee (姚喜), 284
 Yau Hochun (游賀川), 278, 280, 281, 282, 286
 Yau Yamteng (姚任廷), 280, 282, 283, 286
 Yen, Gov. (閻錫山), 677
 Yen Chih-chung (Dr. L. C. Yen) (嚴智鍾), 643, 727, 748
 Yen, Dr. F. C. (顏福慶), 260, 549, 563, 599, 604, 605-606, 607, 609, 610, 615, 622, 630, 635, 668, 685, 694, 695, 766, 767, 768, 773, 774, 779, 782, 800-801, 818, 819
 Yen Fu (嚴復), 641
 Yen, Mr. T. Y. (嚴先生), 664
 Yen, Dr. W. W. (顏惠慶), 593, 632, 667, 711
 Yen, Rev. Y. K. (顏永泉), 467
 Yersin, Dr. A., 516
 Yin, Dr. D. M. (尹瑞模), 447
 Yin, Dr. S. C. (蔭少泉), 726
 Ying Taotai (殷道台), 290
 Yong, Dr. (Anking) (楊醫生), 559
 Yong Samtuk (楊三德), 306
 Young, Dr. (H'kong), 314, 357, 358
 Young, Dr. Andrew, 582
 Young, Dr. A. Russell, 620
 Young, Dr. Charles W., 547, 549, 552, 635, 636, 684
 Young, Dr. E. B. (Yang Ting-kuang) (楊廷琬), 607
 Young, Dr. Jas. H., 345
 Young, Dr. M. P., 712
 Young, Dr. Richard, 471
 Young, Dr. Thomas, 503
 Young, Dr. Wm., 440, 471, 472
 Young, Dr. W. A., 620
 Young Ying (楊英), 408
 Yu, Dr. Robert (虞順德), 569
 Yu Yun-hsiu, Dr. (Yu Yin-zur), (余雲岫), 664, 706
 Yu, Mr. S. D. (袁先生), 696
 Yuan, Dr. I. C. (袁貽璣), 765
 Yuan Liang, Mayor (袁良), 748
 Yuan Shih-k'ai Vicéroy (袁世凱), 448, 543, 557, 566, 601, 607
 Yü Tsai-yü (余財玉), 525
 Yu, Dr. W. Y. (于醫生), 713
 Yuen Yuen, Gov. (阮元), 280, 283
 Yui, C. V. (Dr. C. Voonping Yui) (俞鳳賓), 550, 604, 606, 612, 614, 623, 641, 642, 666, 702, 776, 818
 Yui, Mr. David Z. T. (余日章), 642, 668
 Yung Wing (容宏), 371
 Yvan, Dr., 347
 Zabolotny, Prof. D., 592
 Zachariae, Dr., 402
 Zau Vun-quae, Dr. (趙文貴), 490
 Zee Tze-foong, Dr. (徐子秀), 658
 Zee, Mr. Z. Z. (徐先生), 630
 Zlatogoroff, Dr. S. T., 593
 Zoh Fo-me, Miss (Dr.) (邵福妹), 522
 Zung, Z. V. (陳先生), 544.

IV.—INDEX OF SUBJECTS (BOOKS ONE & TWO)

[N.B.—In order to render this Index less unwieldy, most of the subjects have been listed once only, under certain main headings, e.g. Dispensaries, Hospitals, Medical schools, etc.]

Acupuncture, 2-3, 8, 25, 38, 44-45, 49, 54, 84, 87, 227-232
Vital points for, 33, 228
Adrenalin, 118, 122
Age, Calculation of, 192
Albasines, 271, 277
Alchemy, 9, 68, 69-70, 79
Alcohol problem, 562
Algae, 119-121
American Red Cross, 661
Amoy
Nosology, 412
Public health work, 666, 749
Water works, 749
Anaesthetics, 55, 339-340
Anatomical and Anthropological Association of China, 616
Anatomy, 32-33, 37, 155-156, 195-201
Aneurysm, 418
Anglo-Chinese War, First (1839), 321, 324-325
Second (1856), 367-368
Animal husbandry, 763
Animal experiments, 783
Animism, 4
Anthropology, 2
Anti-Foot-Binding Society, 402
Anti-Opium Societies, 424-425, 468, 566, 603
Anti-pyretic treatment, 51

Anti-tuberculosis work, 757-758, 783
Anti-typhus work, 661
Anti-Venereal Disease League, 781
Apoplexy, 156, 199
Army Medical Service (see also Military medical services), 763
Asthma, 118
Astrology, 13
Atlas of Anatomy, 197
Atmosphere, 38
Auscultation, 21
Autopsies, (see also postmortems), 200-201, 599-600
B*acillus pestis*, 516, 592
Baptizeurs, 270
Bar pulse, 59-60
Beri-beri, 88-89, 211-213
Bibliography, 247-254
Bilious remittent fever, 357, 510
Birth control, 753, 761-762
Bladder, 32, 34
Bladder stone, 336, 363, 405, 406, 487-488, 781
Blood circulation, 33, 35
Bones, 21, 33
Botany, Works on, 204, 265, 271-272
Boxer uprising, 538-539
Boxing, 72-73

- Brain, 34
 Branches of medicine, 75, 77, 95, 96, 132-133
 Breathing exercises, 42, 71
 British Boxer Indemnity Funds, 807
 British Medical Association, Hongkong and China Branch, 522, 673
 British Seamen's Hospital Society, 313
 British surgeons, Early, 303
 Bronze models, 44, 230-231
 Buddhism, 71-73, 77, 260-261
 Bureau of Native Medicine, 166-167
 Burning of books, 74, 128
 Burning spaces, 198
- C***aduceus*, 708
 Caesarean section, 232
 Canton
 Educational situation, 612
 Missionary public health work, 658-659, 666
 Municipal Health Department, 597, 657-658
 Purity campaign, 659
 Waterworks, 567
 Case histories, 48-49, 99
 Castration, 233-234
 Cataract, 224
 Catholic missionaries, Early, 262, 263-270
 Catholic missions, Medical Activity of, 270-271
 Causes of disease, 73, 86, 91
 Central Anti-cholera Bureau, 732, 735
 Central Board of Health, see National Board of Health
 Central Epidemic Prevention Bureau, 602, 734, 738
 Central Field Health Station, 734, 738-739
 Central Hygienic Laboratory, 738, 742
 Central Medical Council, 612
 Chairs of medicine, 44, 75
 Chancre, 218-219
 Channels (*Chin*), 228
 Charges to patients, 426, 429, 435, 452, 453, 486-487, 529, 532
 Charms, 5, 14, 68, 77-78
 Chaulmoogra oil, 114-117, 362-363
 Chefoo Sanitarium, 426
 Children's diseases, 87, 90, 130
 China Foundation for Promotion of Education and Culture, 679
 China Hookworm Commission, 674
 China Medical Association, 674-676, 770-773
 China Medical Missionary Association, see Medical Miss. Assoc.
 China Medical Board, 633-635
 New, 686
China Medical Journal, 555
China Medical Missionary Journal, 466-467
 Chinese benevolent institutions, 346, 354-355, 361, 402-403, 407-408, 434, 460, 494, 499, 537
 Chinese Drug Research Institute, 735
 Chinese Eastern Railway, 569-570
Chinese Journal of Physiology, 679
 Chinese Medical Association (Peking), 604
 Chinese Medical Association, 774-783
Chinese Medical Journal, 774

- Chinese medical periodicals, see
Medical journals
- Chinese medical women, Early,
488, 521-522
- Chinese Mission to Lepers, 665-
666
- Chinese Pharmacopoeia, 724-725
- Chinese Physiological Society,
679
- Chinese Red Cross Society, 591
- Chinese Society of Microbiology,
784-785
- Chinese Pathological Society
(Soc. of Path. and Microbiol.)
785-786
- Chinese textbooks on medical
subjects, 264, 267, 364-366,
373, 393-394, 412-413, 446-447,
455, 483-485, 528, 555, 644-
645, 703-704, 776, 782
- Chloroform, see Anaesthetics
- Cholera, 157, 213-215, 323, 349,
384-387, 490, 496, 595, 596,
602, 608, 732, 735
- Chronology, 235-239, 823-859
- Collective investigation of dis-
eases, 468, 782
- Conferences of Protestant Mis-
sionaries, 394, 463, 563
- Confucianism, 67
- Continued fever, 359, 370
- Council on Public Health, 776,
780
- Council on Public Health Educa-
tion, see Joint Council
- Counter-irritation, 2, 45
- Cremation, 762
- Cubit pulse, 59-60
- Cultural aspects, 132-140, 178-
193
- Curriculum for medical schools,
597, 608, 610, 789, 792-794
- Customs Medical Service, 395-
396
- Customs Medical Reports*, 397-
399, 464, 555
- D**airy farm (Hongkong), 471
- Datura, 55
- Decline of native practice, 141-
146
- Deep breathing, 70-71
- Deer horn, 122-123
- Defective nutrition, 413, 803
- Demonology, 5, 14
- Dengue, 413
- Dental caries, 803
- Dental education, 803-804
- Dentistry, Schools of
Chengt'u, 638, 699-700
Harbin, 803
Lienchow, 554
Peking, 636
Shanghai, 803
- Dentists, Early, 480
- Devolution, 676, 718
- Diaphoretics, 99
- Dictionary, Medical, 177
- Dietetics, 39-40
- Diphtheria, 412, 417
- Diseases of China (Book), 643-
644
- Dispensaries, Early
Amoy, 345-346
Canton, 311, 343-344
Chefoo, 389, 426
Chinkiang, 389
Chungking, 461
Chusan, 324, 349, 350-351
Eastern Mongolia, 499
Foochow, 355, 382
Formosa, 389
Hankow, 389
Hoihow, 459
Ichang, 434
Kalgan, 431, 457
Kiangsu Province, 431
Kiukiang, 434

Dispensaries (Cont.)

- Kwangtung Province, 355-356, 373-377, 408-410, 487, 530
- Macao, 306-308
- Manchuria, 433
- Nanziang, 436
- Ningpo, 347
- Paotingfu, 458
- Peking, 267-268, 388
- Shanghai, 353, 380-381
- Shao-hsing, 435
- Swatow, 382
- Tengchow, 388-389, 426
- Tientsin, 432
- Tsinanfu, 435, 462
- Tungkun, 501
- Dispensing, 9, 54
- Dissections, 33, 195-196, 198-199, 392, 393, 598
- Distoma ringeri*, 418
- Door of Hope, Shanghai, 574-575
- Drug farms, 75
- Drug store, 187-188
- Drugs, Classification of, 7, 75
 - Famous ancient
 - Aconite, 55
 - Algae, 119-121
 - Chaulmoogra oil, 114-117
 - Datura, 55
 - Deer horn, 122-123
 - Ephedrine, 117-118
 - Eumenol, 125-126
 - Ginseng, 110-114
 - Ma huang, 117-118
 - Sinomenin, 119
 - Thyroid, 124
 - Toads, 121-122
 - Introduction of, 3
 - Opinions on, 41
- Dynasties, Summary of Chinese, 240
- Dutch surgeons, 303
- Dysentery, 356-357

- E**ar cleaning, 191-192
- East India Company, 276, 302-306
- Eight diagrams, 6, 10, 15-18
- Elements, Five, 10, 19-21
- Elephantiasis, *see* Filariasis
- Elixir of life, 68, 69-70, 79
- Emetics, 99
- Encyclopaedias, Medical, 84-85, 88, 169-172, 176-177
- Enema, 52
- Ephedrine, 117-118
- Epidemiological survey, 780
- Essay on Typhoid, 49-51, 81-82
- Ether, *see* Anaesthetics
- Eugenics, 43
- Eumenol, 125-126
- Euro-Asiatic contact, Early, 259-260
- European physicians, Early, 261
- Ever-Victorious Army, 369-371
- Examination of old-style practitioners, 568
- Exercise, 54-55
- Exorcism, 75
- Eye diseases, *see* Ophthalmology

- F**actory surgeons, 303-306
- Faith cure, 5, 14, 72, 700
- Famine relief, 661
- Far Eastern Association of Tropical Medicine, 783-784
- Far Eastern Epidemiological Bureau, 726
- Female nurses, 557, 612, 805
- Female students, 394-395, 443, 456, 477, 481, 541-542, 551-552
- Fever
 - Epidemic, 129-130, 154
 - Treatment of, 51, 54, 104
- Filariasis, 412-419
- Five elements, 10, 19-21, 22
- Five poisons, 40, 121

Flood relief work, 764-765
 Folklore, Medical, 3-5, 11
 Foochow Health Department, 601
 Food and drinks, 39, 42
 Foot binding, 189-191, 402
 Founders of medicine, 6-11
 Foundling Hospitals, Early, 264, 354
 Four Famous Literary Treasuries, 170-171
 Fukien Medical Association, 564

Gall-bladder, 32-34
 Ginseng, 110-114
 Gods of Healing, 6, 7, 27, 53, 78, 84, 185
 Goitre, 120
 Gonorrhoea, 21
 Great trio, 48-56
 Great wall, 74
 Guilds, Medical, 7
 Gymnastics, 54-55
 Gynaecology, 86-87, 92, 130, 220-223

Hangchow
 Public health work, 659-660
 West Lake Exposition, 723
 Hankow
 Asylum for prostitutes, 618
 Branch of Medical Miss. Assoc., 467
 Reconstruction program, 606
 Headache, 5
 Health Budget, Govt., 735-737
 Health Conventions, 722-723
 Heart, 32, 34, 35-36, 99
 Helminthic diseases, 762
 Henry Lester Institute of Medical Research, 808-809
 Herbals, 7, 10, 81, 83, 88, 93, 105-109, 128, 201-204, 643
 Highway health service, 739

Hippocrates, Chinese, 49
 History of Chinese medicine, 130-131, 158
 Holt scheme, 807
 Hongkong
 China Medical and Chirurgical Society, 357-358, 360
 Fever, 357, 510
 Medical Services, 357, 516
 Medical Society, 471
 Nosology, 356-357
 Hookworm problem, 658-659, 674, 676
 Hospital kitchen, 374, 375, 450, 487, 503, 572
 Hospital technicians, Training of, 700-701, 802
 Hospitals
 Ancient, 43-44, 91, 137-140, 261
 General information on, 261, 449-450, 466, 539, 572, 613, 616, 715-718, 769, 771, 787, 814-816
 Located in:
 Amoy, 345, 378, 410-411, 452, 488, 530-531, 647
 Anking, 536, 558
 Antung, 588, 653-654, 713
 Canton, 315-317, 324-325, 334-337, 338-342, 344, 361-364, 367-368, 371-377, 403-407, 451, 487-488, 517, 530, 542, 572-575, 646-647, 657, 708-709, 812
 Changchow, 501, 655
 Changli, 586
 Changpoo, 503
 Changsha, 583, 629-630
 Changshu, 713
 Changteh (Hunan), 534, 580, 651
 Chaochowfu, 483
 Chefoo, 494, 532, 649

Hospitals (*Cont.*)

Chenchow, 581
 Chengtu, 500, 580, 699
 Chichow, 501
 Chinwangtao, 585
 Chiningchow, 504
 Chinkiang, 428, 456, 532,
 711, 813
 Chuanchow, 460
 Chuchiachai, 436
 Chuchow, 582
 Chungking, 481, 498, 534,
 579
 Dong-kau, 585
 Engch'un, 581
 Fatshan, 452
 Fenchowfu, 498
 Foochow, 421-423, 455-456,
 477, 491-492, 521, 531,
 575-576, 813
 Fuh-ning, 462
 Futsing, 536
 Hanchung, 461
 Hangchow, 433, 445, 495,
 577, 650, 711
 Hankow, 429-430, 457, 494,
 650
 Hanyang, 588, 713
 Harbin, 570, 594, 652
 Hinghwa, 534
 Hoihow, 460, 533, 579, 813
 Honan, 502, 534, 535
 Hongkong, 358-360, 402-403,
 472, 516-517, 813
 Hwaiyuan, 584
 Hwanghsien, 585
 Huchow, 652
 Ichang, 495-496, 577
 Ichowfu, 503
 Iyang, 583-584
 Jukao, 714
 Kaifengfu, 584, 652, 814
 Kalgan, 495, 650
 Kashing, 505, 652

Hospitals (*Cont.*)

Kiating, 535
 Kiayingchow, 505
 Kien-ning, 501
 Kinhwa, 535
 Kiukiang, 458, 521
 Kiungchow, 460
 Kuling, 588, 654
 Kut'ien, 482, 504
 Kweiyangfu, 651
 Laohokow, 504, 581
 Laoling, 496, 578
 Linch'ingchow, 503
 Lienchow, 503, 581
 Luchowfu, 536
 Luho, 536, 582
 Lungchingsun, 588, 654
 Macao, 262, 309-310, 320-
 323, 475
 Manchuria, 500-501, 503,
 534, 581, 587, 594, 652,
 654
 Mengtsz, 536, 581
 Mienchuhsien, 714
 Mukden, 498, 620, 712
 Nanchang, 521-522, 588
 Nang-wa, 501
 Nanking, 460, 478, 497, 533,
 810
 Nanning, 654
 Newchwang, 532, 594
 Ningpo, 346-347, 350, 378,
 419-420, 489, 648, 710
 Pakhol, 499, 579
 P'angchia-chuang, 458
 Paoning, 587
 Paotingfu, 533, 578-579
 Peking, 382-384, 388, 424-
 426, 492-493, 532, 539,
 567-568, 576-577, 648-649,
 711, 748, 814
 Pingtingchow, 714
 Pingtu, 535
 Pingwu, 655

Hospitals (*Cont.*)

Pingyangfu, 587
 Pingyin, 588
 Shanghai, 351-354, 379-380,
 381-382, 401-402, 420-421,
 452-454, 490-491, 531, 551,
 574, 602-603, 648, 710-711,
 745, 807-808, 811-812
 Shanghang, 654
 Shantung, 504
 Shaowu, 435, 491, 533, 578
 Shasi, 655
 Shekki, 713
 Sianfu, 537, 582
 Sing-iu, 586
 Siokhe, 502, 581
 Soochow, 443, 497, 522, 524,
 533, 578, 711-712
 Suifu, 503
 Swatow, 382, 423-424, 456,
 492, 531
 Taichow, 537
 Taichowfu, 582
 T'aiku, 498
 Tainan, 431, 577
 Taiyuanfu, 459, 497
 Takow (Takao), 396, 430,
 437-438
 Tamsui, 431
 Tangshan, 450
 Tataochen, 503
 Tatungfu, 714
 Te-anfu, 502
 Tengchow, 446, 493
 Tengyueh, 586, 653
 Tientsin, 433, 440, 457-458,
 532, 813
 Tinghsien, 813
 Ts'angchow, 585
 Tsinanfu, 480, 534, 579, 651,
 712
 Tsingchowfu, 499
 Tsingkiangpu, 502, 580
 Tsingtao, 586-587, 653

Hospitals (*Cont.*)

Tsining, 650
 Tsunhua, 500
 Tungan, 655
 Tungchow, 461
 T'ungch'uan, 584
 Tungkun, 580
 T'ung-shin, 504
 Tzeki, 624
 Weihwei, 713
 Wenchow, 435, 533, 578, 651
 Wuchang, 434-435, 496, 532,
 578, 651
 Wuchow, 536-537, 582, 652
 Wuhu, 496, 650
 Wukingfu, 461
 Wusih, 588
 Wutingfu, 813
 Yangchow, 578
 Yenping, 587
 Yeungkong, 653
 Yochow, 583
 Yuhsien, 713
 Yunnanfu, 585, 652
 Hunan Health Association, 662
 Hydrophobia, 90
 Hydrotherapy, 49, 54, 104
 Hygiene, 39, 41-43, 88
 Hygiene, Tracts on, see Public
 Health Propaganda
 Hyperboreans, 259
 Hypnotism, 72
Imperial Medical Bureau, 75
 Imperial College of Medicine, 94,
 133-135, 141
 Incantations, 5, 9, 12, 14, 73, 75,
 77
 Inch pulse, 59-60
 Industrial hospitals and dispen-
 saries, 460, 617-618, 756
 Industrial hygiene, 617, 661-662,
 756

- Insane asylums and hospitals, 452, 469-470, 568, 572, 618, 709, 748, 812, 814
 Insanity, 361, 404, 469
 Institute of Hospital Technology, 675, 701
 Institute of Legal Medicine, 794, 810
 Instruments, Surgical, 2-3, 376
 Intercourse with West, Early, 259-262
 Internal Classic, 7, 9, 28-38, 81
 Internal fires, 102, 127
 Internal medicine, 38, 86, 130, 209-219
 International Advisory Council, 720
 International Health Exhibition London, 450
 International League for Prevention of Blindness in China, 813
 International Mission to Lepers, 660
 International Plague Conference (Mukden), 592-593
 International Reform Bureau, 566
 Intestines, 32-33, 34, 36, 101
 Iodine, 120-121
 Isolation hospitals
 Amoy, 410, 733
 Hangchow, 602
 Nanking, 747, 810
 Peking, 601, 748
 Shanghai, 402, 455, 573, 602-603, 744, 745
 Tangshan, 566
 Tsingtao, 602
Japanese medicine, 74, 135-136
 Jesuits, 264-270, 305
 Joint Committee on School Health, 723
 Joint Council on Public Health Education, 611, 613, 615, 665-666, 672, 676-678
 Jurisprudence, Medical, 207-209
Kala-azar, 684, 762
 Kiangsu Public Health Association, 616-617
 Kidneys, 32, 34, 36, 99
 Kuling Branch, China Med. Miss. Assoc., 564
 Kwangtung Branch, Nat. Med. Assoc., 614
 Kwangtung Province Public Health Service, 596-597
Laparotomy, 55
 League of Nations
 Advisory Committee, 733-736
 Health Section, 726-728
 Leper hospices
 General information, 759-761
 Fatshan, 452
 Hangchow, 495, 650
 Hinghwa, 504
 Iam Tsau, 759
 Kianning, 502
 Kiulungkiang, 759
 Macao, 262
 Pakhoi, 499
 Shanghai, 759
 Shek-lung, 587, 657
 Siaokan, 534-535
 Swatow, 423
 Taikam, 655
 Tenghsien, 655
 Tsinanfu, 712-713
 Tungkun, 580
 Yeungkong, 653
 Yunnanfu, 714
 Leprosy, 209-211, 323, 362, 412, 758-761
 Lester Institute, see Henry Lester Institute

Ligaments, 33
 Lister's method, 420
 Liver, 32, 34, 35-36, 99, 124
 Liver abscess, 418
 Lungs, 32, 34, 36, 124

Ma huang, 117-118
 Magic, Medical, 3, 12, 14, 68, 77
 Malaria, 370, 675, 738, 773, 821
 Manchurian Branch, China Med. Miss. Assoc., 564
 Manchurian Plague Epidemics, 592, 595
 Manchurian Plague Prevention Service, see under North Manchuria
 Marriage, 6, 43
 Massage, 2, 38, 45-46, 75
 Materia medica, 88, 105-109, 201-207
 Modern works on, 265, 272, 429, 468, 643
 Maternity and child welfare, 750, 752-756
 Measles, 349
 Medical administration, 95-96
 Medical Association building, 774
 Medical Board (Shanghai), 745
 Medical Directory, 768, 775, 778, 781
 Medical education, 89, 94-97, 134-135, 143-146, 317, 322, 328-330, 390-391, 466, 468, 526-528, 540-541, 608, 609-610, 612-615, 618, 673, 723, 769, 779, 780, 782, 786-802
 Medical encyclopaedias, 84-85, 88, 169-172, 176-177
 Medical ethics, 140, 612, 672, 674, 778
 Medical Federation of China, 722, 769
 Medical Guide, 767

Medical guilds, 7 ⁴⁴⁻⁷
 Medical journals in Chinese, [^]556, 645-646, 705-707
 Medical Lexicon, 555, 641
 Medical Missionary Association, 464-465, 467-469, 562-565, 607-616, 669-674
 Public health work, 564-565, 608, 610, 613-614, 615-616, 669-670, 671-672
 Research work, see Research Committee
 Medical Missionary Society in China, 318-320, 325-330, 337-338, 342-343, 463
 Medical nomenclature, see Medical terminology
 Medical schools (including early classes)
 Amoy, 411, 452
 Canton, 317-318, 340-341, 362, 363-364, 376, 377, 391-393, 447, 449, 482, 524-525, 545-546
 Army Medical College, 791
 Franco-Chinese School, 626
 Government School, 625
 Kung Yee, 553, 624-625, 689-690
 Kwong Wah, 626
 Sun Yat-sen University Medical School, 691
 Women's Medical College, 541-542, 691-692
 Changsha (Hunan-Yale College), 629-631
 Chefoo, 478
 Chengtu (West China University Medical College), 637-638, 699-700
 Chichow, 524
 Chungking, 418-482
 Foochow, 477-478, 521, 525, 621

Medical schools (*Cont.*)

Hangchow, 445-446, 628, 638, 699, 794
 Hankow, 542-543
 Harbin, 700
 Hongkong, 359, 360, 471-477, 626-627
 Ichow, 525-526
 Kashing, 628
 Kuangming (Yunnan Army Med. Coll.), 629
 Kut'ien, 482
 Kwangsi Army Medical College, 791
 Lienchow, 554
 Mukden, 444-445, 619, 620-621
 Nanchang, 628, 794
 Nanking, 478, 523, 552-553
 Army Medical College, 543-544
 Med. Dept. National Central University, 794
 Nantung, 629
 Paotingfu, 689, 794
 Peking, 470, 523-524
 Army Medical College, 543
 Special Medical College, 547, 627-628, 688
 Union Medical College, 546-549, 631-636, 678, 680-686
 Union Medical College for Women, 551-552
 Shanghai
 Aurora University, 545
 German (Tungchi) Medical School, 551, 623, 696
 National University Medical College, 694-695, 819
 Private medical schools, 624, 693
 St. John's (Pennsylvania) Medical School, 443, 522-523, 549-550, 621-623, 695

Medical schools (*Cont.*)

Women's Christian Medical College, 692
 Soochow, 443-444, 481, 524, 544, 552, 628
 Swatow, 423, 482
 Taichowfu, 554
 Takow, 437-440
 Tengchow, 446
 Tientsin, 440-443, 479-480, 543
 Tsinanfu, 480, 553-554, 636-637, 697-698, 791
 Tsingtao, 618-619, 699
 Tzeki, 624
 Weihsien, 481
 Wuchang, 550-551, 628
 Yunnanfu, 791
 Medical sects, 127-131, 142
 Medical societies (Old-style), 159-160, 161, 165
 Medical special colleges, 627, 788-789, 791, 793-794
 Medical terminology, 343, 467, 468, 554-555, 641-643, 702, 775
 Medical Terminology Association, 642
 Medicine, Divisions of,
 Ching dynasty, 129, 141, 147-158
 Chou dynasty, 39-47, 94
 Han dynasty, 74-79
 Ming dynasty, 127-131
 Sung dynasty, 86-89, 90-93, 94-97, 127
 T'ang dynasty, 74-79, 94
 Yuan dynasty, 96, 132-133
 Meditation, 72, 73
 Meningitis, 821
 Mercury, 217, 219
 Mid-China Branch of the Med. Miss. Assoc., 564
 Midwifery, 220-223
 Midwifery training, 676, 734, 738, 751, 754-755

Midwifery training (*Cont.*)

Canton, 486
 Changsha, 806-807
 Futsing, 559
 Hangchow, 558
 Hankow, 807
 Hinghwa, 807
 Kongmoon, 638
 Nanking, 753-754
 Ningpo, 529
 Peiping, 751-752

Military medical services

Chinese, 363, 368, 451, 479,
 494, 520, 763

Foreign, 357, 369-371, 539-540

Min Cheng Pu Hospitals, 567

Ministry of Health, 161, 165,
 167, 719-725

Modern medicine, Influence on
 old-style practice, 143, 159-
 168

Modern-trained doctors, Number
 of, 787, 799-800

Moral Welfare Committee
 (Shanghai), 618

Morphine, 183, 613, 616

Moxa, 2, 25, 45

Municipal public health work,
 740-741

Museum of China Medical
 Missionary Association, 469

Mythology, 1-2, 3-4, 11

Nanking

Anti-fly and mosquito cam-
 paign, 663

Branch of the Med. Miss.
 Assoc., 467

Municipal health service, 746-
 747

Waterworks, 747

National Anti-Tuberculosis As-
 sociation, 758

National Board of Health, 720,
 722-723, 723-724

National Bureau for Control of
 Narcotic Drugs, 725

National Child Welfare Associa-
 tion, 755-756

National Commission on Medical
 Education, 786, 791

National Commission on Nurs-
 ing Education, 805

National Epidemic Prevention
 Bureau (see also Central Epi-
 demic Prevention Bureau),
 738

National Health Administration,
 734, 738

National Health Association, 658
 National health essay contest,
 614

National Medical Association,
 603-607, 611-616, 666-669,
 765-770

National Medical Journal, 605,
 775, 778

National Midwifery Board, 751

National Quarantine Service,
 729-733, 738

Needles for acupuncture, 2, 10,
 44, 228

Nei Ching, see Internal Classic

Nervous system, 34

Nestorian Christians, 261

Newchwang Sanitary Service,
 818

North Manchurian Plague Pre-
 vention Service, 593-596

Northwest Epidemic Prevention
 Bureau, 738

Number-lore, 20

Nurses

Chinese, 456, 561, 562

Early, 374, 449, 453, 456, 501,
 503

Female, 557, 612, 805

Nurses' Association, 560-562

Journals, 645-646

Training, 560, 561, 613,
805-806

Training schools

Anking, 558

Canton, 556, 638

Changchow, 655

Changsha, 639

Chefoo, 639

Chengtú, 639

Chungking, 557

Foochow, 486, 559-560

Futsing, 559

Hangchow, 640

Hankow, 557

Hongkong, 529

Kashing, 640

Liling, 640

Nanking, 486, 559, 640,
805

Peking, 529, 557, 639-640

Pingyangfu, 587

Shanghai, 485, 556, 622,
639, 701-702

Soochow, 639

Tientsin, 557-558

Tsinan, 640

Wuchow, 702

Yenping, 702

Yochow, 583

Obstetrics, 86-87, 220-223Official recognition of modern
medicine, 600

Old-style practitioners

Instruction of, 348, 350

Legislation for, 160, 167-168

Licensing of, 722

Status of, 76, 160, 178-180

Ophthalmology, 223-225

Opium evil, 180-184, 362, 375,
498, 566, 603Opium-addicts, Treatment of,
347-348, 349-350, 376, 379,
406-407, 420, 422, 424-425,
429, 433, 452, 457, 461, 468,
493, 497, 498, 810, 814

Organotherapy, 123-124

Organs, Five, 20, 36

Ovariectomy, 406

Pakhoi Sanitary Department,
567

Pa Kua, see Eight diagrams

Panaquillon, 114

Pantokrin, 123

Parasitology, 225-227

Pathological exhibit, 773

Pathology, 37-38

Paying patients (see also
Charges to patients), 404, 424

Peiyang

Quarantine Department, 601

Sanitary Service, 566

Peking (later Peiping)

Branch of China Med. Miss.
Assoc., 564

Child Health Station, 753

Drainage system, 195

Health Demonstration Sta-
tions, 663-664, 748

Midwifery Commission, 751

Missionary public health work,
662Municipal public health work,
747-748

Tuberculosis Club, 757-758

Water supply, 195

Peking and Tientsin Branch of
the Nat. Med. Assoc., 614

Pents'ao, see Herbals

Pestilences, 507

Pharmacology, 75, 106

Pharmacopoeia, 83, 107, 109,
724-725

Pharmacy schools, 804-805
 Anking-Hankow, 701
 Chengtu, 688
 Hangchow, 628, 638
 Peiping, 805
 Shanghai, 805
 Soochow, 544
 Tientsin, 543
 Tsinanfu, 698
 Philosopher's stone, 69
 Philosophy of disease, 15-21
 Photographs, First use of, 374
 Physicians, Ancient, 22-27
 Physiology, 34-35
 Plague, 128, 129
 North Manchuria, 592, 595
 Shansi-Shensi, 602, 821
 South China, 506-516, 821
 South Manchuria, 595
 Plant-lore, 14
Plinius Indicus, 264
 Poisons, 6, 10, 11, 40, 121
 Postal medical service, 763-764
 Postgraduate training, 682-683,
 687, 778, 779, 783, 789, 802,
 807, 810
 Postmortems, 200-201, 340, 376,
 380, 392, 393, 412, 413, 417,
 592
 Praying cures, 77
 Pregnancy, 43
 Prescriptions, 10, 51-52, 82, 86,
 92, 99, 101, 106, 185-187
 Prevention of disease, 41
 Priest-doctors, 12-14, 41
 Prostitutes, Segregation of, 44
 Protestant medical missionaries,
 314-315, 332, 383, 467
 Proverbs, 76
 Provincial public health work,
 739-740
 Psychotherapy, 14, 72
 Public health, 39, 41-42

Public Health Council (see also
 Joint Council of Public Health
 Education), 611
 Public health propaganda, 429,
 564, 611, 704, 723, 741, 785
 Public health workers, Training
 of, 794, 802-803
 Pulse lore, 38, 57-66, 83, 108,
 265
 Purgatives, 99

Quackery, 143
 Quarantine, 728-733
 Amoy, 413, 728, 732-733
 Antung, 713, 728
 Canton, 728, 729, 730
 Chefoo, 728
 Chinwangtao, 601, 730
 Hankow, 728, 733
 Newchwang, 518, 594, 728
 Ningpo, 518
 Peiyang Quarantine Dept., 601
 Shanghai, 399-400, 518, 728,
 730-732
 Swatow, 518, 728
 Tangku-Taku, 730, 733
 Tientsin, 518-519, 728, 730,
 733
 Tsingtao, 729
 Quinine, Early use of, 266, 270,
 324

Railway medical services,
 568-571, 763
 Red Cross activities, 590
 Changsha, 590, 592
 Chefoo, 494, 520
 Chinchow, 520
 Hankow, 590
 Manchuria, 591
 Newchwang, 445, 519, 571
 Ningpo, 592
 Paotingfu, 591
 Peking, 591, 711

Red Cross activities (*Cont.*)

- Shanghai, 521, 571, 590, 591-592, 710
- Shanhaikwan, 520
- Tientsin, 519-520
- Wanhsien, 592
- Wuchang, 590
- Wuhu, 592
- Yunnanfu, 652

Registration

- Hospitals, 676
- Nursing schools, 561
- Old-style practitioners, 568, 722
- Practitioners, Dentists and Veterinary surgeons, 722, 779

Regulations

- Dissections, 598, 600, 778
- Drug merchants, 603
- Medical, 167-168
- Medical and pharmaceutical examinations, 597
- Hypodermic syringes, patent medicines, etc., 725
- Narcotics, 603, 725
- Prevention of infectious diseases, 602

Relapsing fever, 507, 677, 821

Religion and medicine, 12-14, 67-73

Repositories, 172-176

Research Committee (Council), 562, 608-609, 610, 613-614, 676, 767, 768, 773, 775, 780, 782

River plan, 16-17

Rockefeller Foundation, 633, 686-688

Rural health work, 738, 749-750, 821

Russian Ecclesiastical Mission, 271-272

Sacrifices to ancient physicians, 185

Sage of Medicine, 49, 82

Sanitation, Ancient, 194-195

Sanitary Code, 721

Sanitary Department (Peking), 567

Scarlet fever, 426-428, 468

School hygiene, 565, 673, 723, 741, 743, 744, 746, 747, 756

Seal characters, 46-47

Seamen, Medical care of, 311-314

Seasons, Four, 38, 39

Sex, Determination of, 65

Sexual intemperance, 23, 43

Shanghai

Association for Improvement of Rural Districts, 783

Association of Medical Specialists, 786

Branch of China Medical Missionary Association, 467

Medical Board, 745

Medical Society, 678

Moral welfare work, 618, 660-661

Municipal public health services, 382, 400-401, 454, 489-490, 519, 573-574, 664, 741-746

Pharmaceutical Association, 786

Prostitutes, 401-402

Public Health Club, 785

Sanitarium, 622

Veterinary services, 744, 745, 746

Voluntary public health work, 665

War work (1932), 765

Waterworks, 454, 792

Ship-surgeons, 165, 166, 312, 313

Signatures, Doctrine of, 206
 Similan, 119
 Sinomenin, 119
 Smallpox, 82, 215-216, 269, 273-274
 Society of Experimental Biology and Medicine, 678
 Soochow
 Branch of National Medical Association, 614
 Medical Union, 616
 Public Health Association, 662
 Sorcerers, 12-14, 68
 South Manchurian Railway, 571
 Specialism, 86-89
 Spectacles, 137
 Spleen, 32, 34, 35-36, 99
 Excision of, 55
 Sprue, 417
 Standard works, 80-85
 State examinations, 83, 89, 94-97
 State medical service, 769, 800-801
 Status of old-style physicians, 76, 178-179
 Stomach, 32, 34, 36, 101, 124
 Superstitions, Medical, 5, 12, 187
 Surgery, Old-style, 9, 40, 53-56, 87, 130, 227-234
 Syphilis, 136-137, 217-219
 Systems of medicine, 15

Tang Kuei, 124-126
 Tangshan Bacteriological Laboratory, 566
 Taoism, 67-73, 77, 79
 Taoist pope, 68-69
 Tarabagan, 595
 Tea drinking, 193, 194, 387
 Temperatures, Doctrine of, 206
 Temple of Medicine, 185
 Temple prescriptions, 188-189
 Testimonial tablets, 184

Therapeutics, 9, 38
 Thyroid, 124
 Tientsin
 Incident, 407
 Pasteur Institute, 663
 Sanitary Department, 567
 Waterworks, 519
Tinea imbricata, 417
 Toads, 121-122
 Toleration clause, 334, 367
 Tongue in diagnosis, 148, 265
 Tonics, 98, 99, 101, 129, 149
 Trachoma survey, 658
 Trichinosis, 418
 Tsinanfu Institute, 565
 Tuberculosis (see also Anti-tuberculosis work), 323
 Tuberculosis sanitaria
 Peiping, 577, 757
 Shanghai, 758
 Tumours, 361-362
Tungchi Medical Monthly, 696
 Tung Wen College, Imperial, 393, 470, 524
 Two principles, Doctrine of, see Yin and Yang principles
 Typhoid fever, 52-53, 129-130, 154
 Typhus, 507

Vaccination, 216, 273-301
 Foochow, 295
 Formosa, 296
 Hainan, 296-297
 Hangchow, 294-295
 Hongkong, 288-289
 Ichang, 297-298
 Ningpo, 297
 Pakhoi, 298
 Peking, 281, 286-288
 Shanghai, 289-293
 Soochow, 293
 South China, 277-285

Vaccination (*Cont.*)

- Tracts on, 277-278, 280, 282, 283
- Wenchow, 297
- Vaccination institutes, 277, 280, 282, 284, 285, 286-287, 288, 289-292, 299, 490
- Variolation, 215-216, 274-276
- Vascular system, 33
- Venereal Diseases Commission, 660
- Venesection, 38
- Veterinary laboratory, 763
- Veterinary school (Paotingfu), 629
- Veterinary services (Shanghai), 744, 745, 746
- Veterinary surgeons, 9, 39-40
- Viscera, Six, 36

West China Council on Health Education, 785

Wind diseases, 37-38, 98

Witch doctoring, 5

Women and Children's hospitals, 422, 424, 425, 444, 453, 456, 457, 461, 477, 493, 497, 521, 522, 532, 533

Women physicians, 56, 97, 395, 422, 425, 451, 453-454, 461, 612

Women's Social Service League (Changsha), 617

Wound infections, 337, 406, 414

Writing, Invention of, 80-81

X rays, 24

Yin and Yang principles, 10, 15, 18-19, 103, 127, 206

CORRIGENDA

- | | |
|---|---|
| <p>Pg. 266, line 17 from below, read
<i>Visdelou</i></p> <p>Pg. 342, first line, read <i>Marshall</i></p> <p>Pg. 351, line 17 from above, read
<i>Lockhart</i></p> <p>Pg. 382, line 4 from below, read
<i>Lockhart</i></p> <p>Pg. 458, line 2 from below, read
<i>Merritt</i></p> <p>Pg. 464, fourth line of ref. (647)
read <i>Mathews</i></p> <p>Pg. 465, line 10 from below, 2nd
column, instead of R. Mackenzie
(Tientsin), read R. Macdonald
(<i>Fatshan</i>)</p> <p>Pg. 491, line 20 from above, read
<i>Mathews</i></p> <p>Pg. 555, line 19 from above, read
<i>Mary Fulton</i></p> <p>Pg. 562, line 15 from below, read
M. U. Kycng</p> | <p>Pg. 578, first line of ref. (1008)
read C. H. Barlow</p> <p>Pg. 584, line 14 from below, read
Mr. <i>Chu</i></p> <p>Pg. 592, line 2 from below, read
Paul B. Haffkine</p> <p>Pg. 614, line 9 from above, read
Liang San-wan</p> <p>Pg. 615, line 3 from below, read
Dr. W. G. Lennox</p> <p>Pg. 646, line 14 from above, read
Dr. C. J. Chin</p> <p>Pg. 650, line 9 from above, read
<i>Hannestad</i></p> <p>Pg. 661, line 4 from above, read
<i>Marah</i></p> <p>Pg. 705, line 10 from above, read
Dr. M. L. Huang.</p> |
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